Powerware Series

Eaton® 9355 Parallel UPS
10/15 kVA
User's Guide

Powering Business Worldwide

Powerware Series

Eaton® 9355 Parallel UPS
10/15 kVA
User's Guide

Powering Business Worldwide

Class A EMC Statements

FCC Part 15

NOTE This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

ICES-003

This Class A Interference Causing Equipment meets all requirements of the Canadian Interference Causing Equipment Regulations ICES-003.

Cet appareil numérique de la classe A respecte toutes les exigences du Reglement sur le matériel brouilleur du Canada.

IEC 62040-2

Some configurations are classified under IEC 62040-2 as "Class-A UPS for Unrestricted Sales Distribution." For these configurations, the following applies:

WARNING This is a Class A-UPS Product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take additional measures.

Eaton, Powerware, ABM, LanSafe, Powerware Hot Sync, and X-Slot are registered trademarks of Eaton Corporation or its subsidiaries and affiliates. Greenlee is a registered trademark of Greenlee Textron. National Electrical Code and NEC are registered trademarks of National Fire Protection Association, Inc. All other trademarks are property of their respective companies.

©Copyright 2005–2010 Eaton Corporation, Raleigh, NC, USA. All rights reserved. No part of this document may be reproduced in any way without the express written approval of Eaton Corporation.

Requesting a Declaration of Conformity

Units that are labeled with a CE mark comply with the following harmonized standards and EU directives:

- Harmonized Standards: IEC 62040-1-1 and IEC 62040-2; IEC 60950 Third Edition
- EU Directives: 73/23/EEC, Council Directive on equipment designed for use within certain voltage limits
  93/68/EEC, Amending Directive 73/23/EEC
  89/336/EEC, Council Directive relating to electromagnetic compatibility
  92/31/EEC, Amending Directive 89/336/EEC relating to EMC

The EC Declaration of Conformity is available upon request for products with a CE mark. For copies of the EC Declaration of Conformity, contact:

Eaton Power Quality Oy
Koskelontie 13
FIN-02920 Espoo
Finland
Phone: +358-9-452 661
Fax: +358-9-452 665 68

Special Symbols

The following are examples of symbols used on the UPS or accessories to alert you to important information:

RISK OF ELECTRIC SHOCK - Observe the warning associated with the risk of electric shock symbol.

CAUTION: REFER TO OPERATOR'S MANUAL - Refer to your operator's manual for additional information, such as important operating and maintenance instructions.

This symbol indicates that you should not discard the UPS or the UPS batteries in the trash. This product contains sealed, lead-acid batteries and must be disposed of properly. For more information, contact your local recycling/reuse or hazardous waste center.

This symbol indicates that you should not discard waste electrical or electronic equipment (WEEE) in the trash. For proper disposal, contact your local recycling/reuse or hazardous waste center.

ON - Indicates that the switch is in the ON position.

OFF - Indicates that the switch is in the OFF position.

PHASE - The word “phase.”

Table of Contents

1 Introduction 1

2 Safety Warnings 3

3 UPS Setup 7

Inspecting the Equipment 7
Floor Loading 8
Clearances 8
Unloading the Cabinet(s) 9
Three-High Cabinets or Two-High EBMs 9
Two-High UPS Cabinets 13

4 Version 1 Tie Cabinet Parallel Installation 17

5 Version 2 Tie Cabinet Parallel Installation 27

6 Installing Options 41

Powerware Hot Sync® CAN Bridge Card 42

7 Stabilizing the Cabinet 47

8 Extended Battery Module Installation 51

9 Operation 55

Control Panel Functions 55
Changing the Language 56
Display Functions 56
User Settings 58
Initial Startup 60
Configuring the UPS for EBMs 61
Parallel System Shutdown 62
Individual UPS Shutdown 63
Restarting the Parallel System 64

10 Parallel Bypass 65

11 Troubleshooting 67

Typical Alarms and Conditions 67
Silencing the Alarm 69
Service and Support 70

12 Warranty 71

Limited Factory Warranty 71

Chapter 1 Introduction

A parallel system with up to four uninterruptible power supplies (UPSs) can be installed to provide a parallel capacity and/or redundant system. This load sharing system provides more capacity than a single UPS and can provide backup, depending on the load and configuration. In addition, when one UPS is taken out of service for maintenance or is not operating properly, a redundant UPS continues to supply uninterrupted power to the critical load. A parallel Powerware Hot Sync® CAN Bridge Card provides connectivity for system metering and operational mode control. The parallel system consists of two to four UPSs, each with a parallel CAN Bridge Card and a parallel cabinet.

Figure 1 shows the Eaton 9355 UPS UPS and an optional Extended Battery Module (EBM).

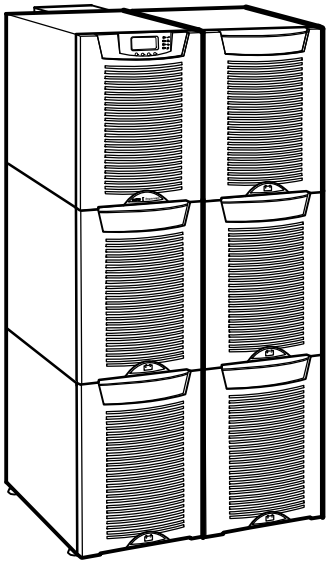

Figure 1. The Eaton 9355 UPS UPS and EBM (3-High Cabinets Shown)

Chapter 2 Safety Warnings

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions that you should follow during installation and maintenance of the UPS and batteries. Please read all instructions before operating the equipment and save this manual for future reference.

DANGER

This UPS contains **LETHAL VOLTAGES**. All repairs and service should be performed by **AUTHORIZED SERVICE PERSONNEL ONLY**. There are **NO USER SERVICEABLE PARTS** inside the UPS.

WARNING

- This UPS contains its own energy source (batteries). The UPS output may carry live voltage even when the UPS is not connected to an AC supply.
- To reduce the risk of fire or electric shock, install this UPS in a temperature and humidity controlled, indoor environment, free of conductive contaminants. Ambient temperature must not exceed 40°C (104°F). Do not operate near water or excessive humidity (95% maximum).
- To reduce the risk of fire, connect only to a circuit provided with 100 amperes maximum branch circuit overcurrent protection in accordance with the National Electrical Code® (NEC®), ANSI/NFPA 70.
- Output overcurrent protection and disconnect switch must be provided by others.

CAUTION

- Batteries can present a risk of electrical shock or burn from high short circuit current. Observe proper precautions. Servicing should be performed by qualified service personnel knowledgeable of batteries and required precautions. Keep unauthorized personnel away from batteries.
- Proper disposal of batteries is required. Refer to your local codes for disposal requirements.
- Never dispose of batteries in a fire. Batteries may explode when exposed to flame.

Consignes de Sécurité

CONSIGNES DE SÉCURITÉ IMPORTANTES
CONSERVER CES INSTRUCTIONS
CE MANUEL CONTIENT DES CONSIGNES DE SÉCURITÉ IMPORTANTES

DANGER!

Cet onduleur contient des TENSIONS MORTELLES. Toute opération d'entretien et de réparation doit être EXCLUSIVEMENT CONFIÉE A UN PERSONNEL QUALIFIÉ AGRÉÉ. AUCUNE PIÈCE RÉPARABLE PAR L'UTILISATEUR ne se trouve dans l'onduleur.

WARNING

- Cet onduleur renferme sa propre source d'énergie (batteries). Les prises de sortie peuvent être sous tension même lorsque l'onduleur n'est pas branché sur le secteur.
- Pour réduire les risques d'incendie et de décharge électrique, installer l'onduleur uniquement à l'intérieur, dans un lieu dépourvu de matériaux conducteurs, où la température et l'humidité ambiantes sont contrôlées. La température ambiante ne doit pas dépasser 40 °C. Ne pas utiliser à proximité d'eau ou dans une atmosphère excessivement humide (95 % maximum).
- La protection contre une surintensité pour le(s) circuit(s) de sortie de courant alternatif doit être fournie par un autre fournisseur.
- Les interrupteurs de déconnexion convenables pour le(s) circuit(s) de sortie de courant alternatif doivent être fournie par un autre fournisseur.

ATTENTION!

- Les batteries peuvent présenter un risque de décharge électrique ou de brûlure par des courts-circuits de haute intensité. Prendre les précautions nécessaires.
- Une mise au rebut réglementaire des batteries est obligatoire. Consulter les règlements en vigueur dans votre localité.
- Ne jamais jeter les batteries au feu. L'exposition aux flammes risque de les faire exploser.

Advertencias de Seguridad

INSTRUCCIONES DE SEGURIDAD IMPORTANTES
GUARDE ESTAS INSTRUCCIONES
ESTE MANUAL CONTIENE INSTRUCCIONES DE SEGURIDAD IMPORTANTES

PELIGRO

Este SIE contiene VOLTAJES MORTALES. Todas las reparaciones y el servicio técnico deben ser efectuados SOLAMENTE POR PERSONAL DE SERVICIO TÉCNICO AUTORIZADO. No hay NINGUNA PARTE QUE EL USUARIO PUEDA REPARAR dentro del SIE.

WARNING

- Este SIE contiene su propia fuente de energía (las baterías). Los receptáculos de salida pueden transmitir corriente eléctrica aun cuando el SIE no esté conectado a un suministro de corriente alterna (c.a.).
- Para reducir el riesgo de incendio o de choque eléctrico, instale este SIE en un lugar cubierto, con temperatura y humedad controladas, libre de contaminantes conductores. La temperatura ambiente no debe exceder los 40°C. No trabaje cerca del agua o con humedad excesiva (95% máximo).
- La protección contra exceso de corriente para el/los circuito(s) de CA de salida será suministrada por terceros.
- Los interruptores de desconexión debidamente clasificados para el/los circuito(s) de CA de salida serán suministrados por terceros.

PRECAUCIÓN

- Las baterías pueden presentar un riesgo de descargas eléctricas o de quemaduras debido a la alta corriente de cortocircuito. Preste atención a las instrucciones correspondientes.
- Es necesario desechar las baterías de un modo adecuado. Consulte las normas locales para conocer los requisitos pertinentes.
- Nunca deseche las baterías en el fuego. Las baterías pueden explotar si se las expone a la llama.

Chapter 3 UPS Setup

This chapter describes:

- Equipment inspection
- Floor loading and clearances
- Unloading the cabinet(s)

The instructions are intended for the chief operator/system supervisor, electrical consultants, and installation electricians. Local regulations and electrical code must be followed during the UPS installation.

Inspecting the Equipment

If any equipment has been damaged during shipment, keep the shipping and packing materials for the carrier or place of purchase and file a claim for shipping damage. If you discover damage after acceptance, file a claim for concealed damage.

To file a claim for shipping damage or concealed damage: 1) File with the carrier within 15 days of receipt of the equipment; 2) Send a copy of the damage claim within 15 days to your service representative.

NOTE *Check the battery recharge date on the packaging label. If the date has expired and the batteries were never recharged, do not use the UPS. Contact your service representative.*

Floor Loading

When planning the installation, consider the UPS weight for floor loading. The strength of the installation surface must be adequate for point and distributed loadings. The approximate weights are shown in the following table.

Standard Model Floor Loadings (2-High/3-High Cabinets)		
Eaton 9355 UPS	**Maximum Weight**	**Point Loading lb/in^2 (kg/cm^2)**
2-High UPS	381 lb (173 kg)	95 (6.7)
3-High UPS-32	587 lb (266 kg)	147 (10.3)
3-High UPS-64	619 lb (281 kg)	155 (10.9)
2-High EBM	480 lb (218 kg)	120 (8.4)
3-High EBM	710 lb (322 kg)	178 (12.5)

Clearances

The following clearances are recommended for the Eaton 9355 UPS UPS:

From Front of Cabinet	36″ (91.4 cm) working space
From Back of Cabinet	6″ (15.2 cm)

Unloading the Cabinet(s)

The following tools are required for unloading the cabinet(s):

- 15 mm wrench or socket
- 7 mm nut driver or socket

CAUTION

The UPS and Extended Battery Module (EBM) are heavy (see page 8). Unloading the cabinets requires at least two people to safely remove the cabinets from the pallet.

To unload three-high cabinets or two-high EBMs, continue to the following section. To unload two-high UPS cabinets, proceed to page 13.

Three-High Cabinets or Two-High EBMs

To remove a three-high cabinet or a two-high EBM from the shipping pallet:

1. Remove the two M10 bolts securing the stabilizing bracket to the pallet (see Figure 2).

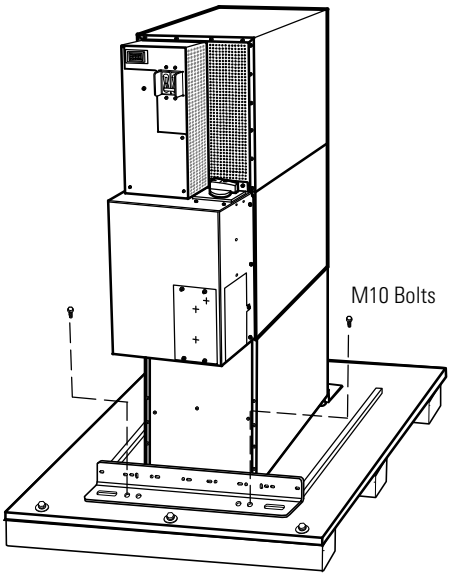

Figure 2. Removing the Stabilizing Bracket Bolts

2. Remove the four M4 screws securing the stabilizing bracket to the cabinet rear panel and remove the bracket (see Figure 3). Retain the hardware for later use.

NOTE *Retain the stabilizing bracket and hardware for later re-assembly onto the cabinet.*

3. Remove the front cover from the bottom cabinet to access the front shipping bracket.

   Press and release the handle latch at the bottom of the cover and then lift the cover up and off the cabinet.

4. Remove the three M10 bolts securing the rear shipping pad to the pallet and remove the shipping pad.

NOTE *Hold the back of the cabinet so that the bolts can be removed easily without the cabinet rolling backward.*

5. Remove the two M10 bolts securing the front shipping bracket and remove the bracket.

If needed, adjust the leveling feet to release the bracket.

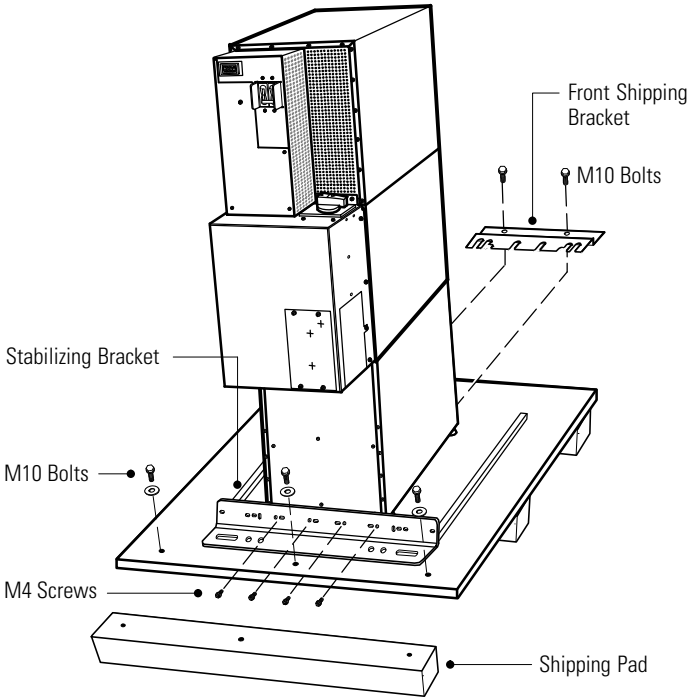

Figure 3. Removing the Brackets and Shipping Pad

6. Reinstall the front cover removed in Step 3.

Hang the top edge of the cover on the cabinet first, then lower the bottom edge and snap into place.

NOTE *Support the front and back of the cabinet when rolling it off the pallet to prevent tipping.*

7. Slowly roll the cabinet toward the rear of the pallet. Once the pallet tilts, continue rolling the cabinet down the pallet until the cabinet touches the floor (see Figure 4).

If needed, adjust the leveling feet so that the cabinet rolls freely.

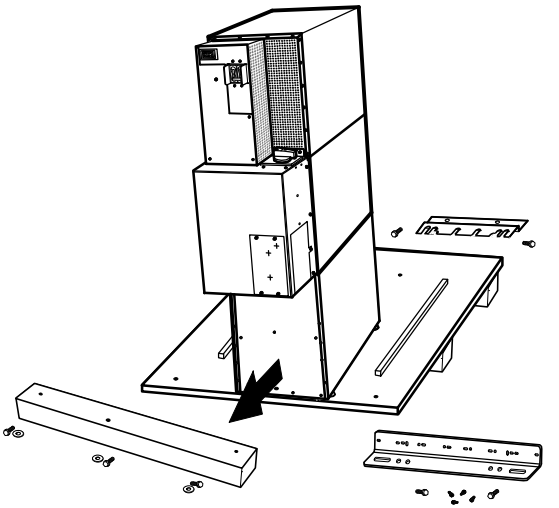

Figure 4. Unloading the Cabinet

8. With the cabinet supported, slowly pull the pallet away from the cabinet (see Figure 5).

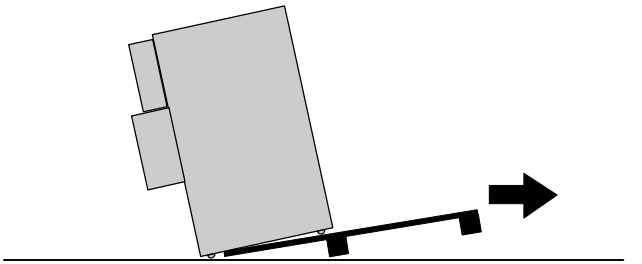

Figure 5. Removing the Pallet

9. Roll the cabinet to the desired location.

Two-High UPS Cabinets

To remove a two-high UPS from the shipping pallet:

1. Remove the M10 bolt securing the vertical bracket to the pallet (see Figure 6).
2. Remove and retain the three M4 screws securing the vertical bracket to the UPS. Remove the vertical bracket.

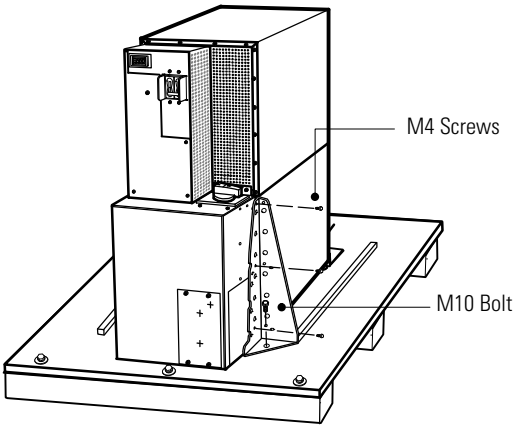

Figure 6. Removing the Vertical Bracket

3. Reinstall the M4 screws to the UPS (see Figure 7).

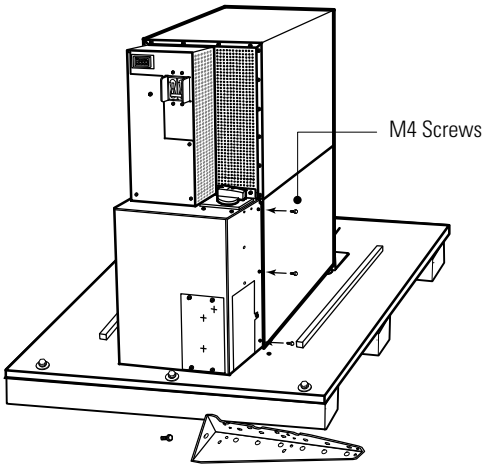

Figure 7. Reinstalling the M4 Screws

4. Repeat Steps 1 through 3 to remove the vertical bracket on the other side.

5. Remove the front cover from the bottom cabinet to access the front shipping bracket.

   Press and release the handle latch at the bottom of the cover and then lift the cover up and off the cabinet.

6. Remove the three M10 bolts securing the rear shipping pad to the pallet and remove the shipping pad (see Figure 8).

NOTE *Hold the back of the cabinet so that the bolts can be removed easily without the cabinet rolling backward.*

7. Remove the two M10 bolts securing the front shipping bracket and remove the bracket.

   If needed, adjust the leveling feet to release the bracket.

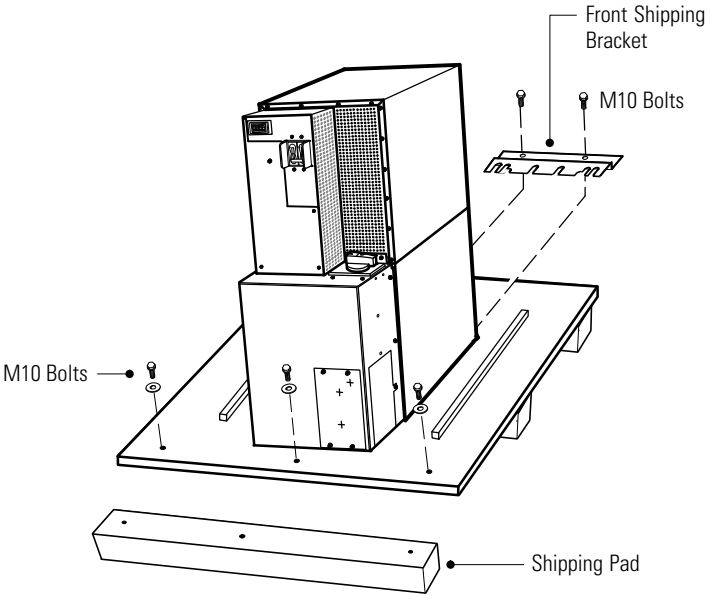

Figure 8. Removing the Front Shipping Bracket and Shipping Pad

8. Reinstall the front cover removed in Step 5.

Hang the top edge of the cover on the cabinet first, then lower the bottom edge and snap into place.

NOTE *Support the front and back of the cabinet when rolling it off the pallet to prevent tipping.*

9. Slowly roll the cabinet toward the rear of the pallet. Once the pallet tilts, continue rolling the cabinet down the pallet until the cabinet touches the floor (see Figure 9).

If needed, adjust the leveling feet so that the cabinet rolls freely.

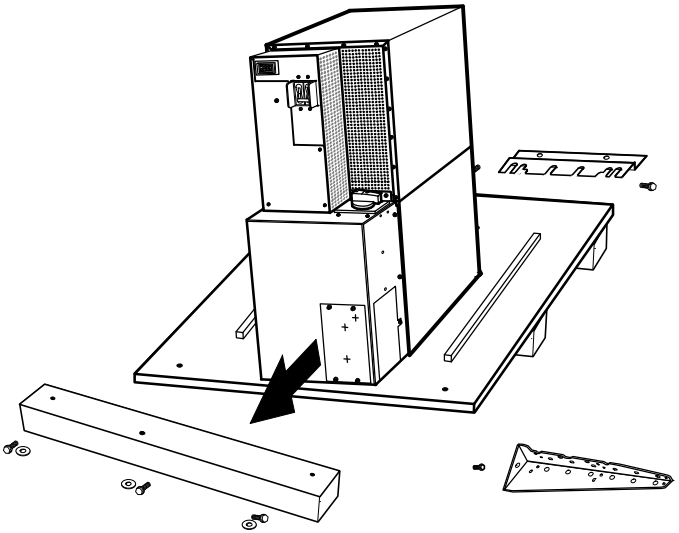

Figure 9. Unloading the Cabinet

10. With the cabinet supported, slowly pull the pallet away from the cabinet (see Figure 10).

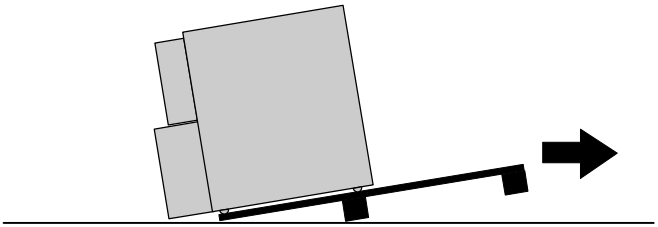

Figure 10. Removing the Pallet

11. Roll the cabinet to the desired location.

Chapter 4 Version 1 Tie Cabinet Parallel Installation

The Eaton 9355 UPS UPS has the following power connections:

- 3-phase (L1, L2, and L3), neutral, and ground connection for rectifier/bypass input
- 3-phase (L1, L2, and L3), neutral, and ground connection for load output

The nominal input/output voltages are:

- 120/208 or 127/220 Vac

Output overcurrent protection and disconnect switch must be provided by others.

Figure 19 and Figure 20 beginning on page 25 show the oneline diagrams.

WARNING

Only qualified service personnel (such as a licensed electrician) should perform the UPS installation and initial startup. Risk of electrical shock.

To hardwire the parallel system:

1. Verify that the electrical connections to the installation site have been properly installed.
2. A wall-mounted, user-supplied, readily-accessible disconnection device must be incorporated in the input wiring.

   Compare the circuit breaker ratings to the ones in Table 1 on page 21.

NOTE *To accommodate the feature of easy system expandability, it is recommended that initial installation of the Eaton 9355 UPS UPS contain wiring to support the maximum capacity of the UPS cabinet.*

3. Switch off utility power to the distribution point where the parallel tie cabinet and UPSs will be connected. Be absolutely sure there is no power.

4. Determine your equipment's grounding requirements according to your local electrical code.

5. Remove the parallel tie cabinet front cover (see Figure 11).

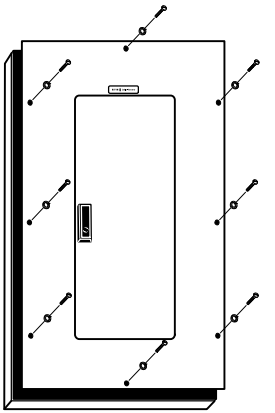

Figure 11. Version 1 Parallel Tie Cabinet Front Cover

6. Remove the internal cover to gain access to the breakers (see Figure 12).

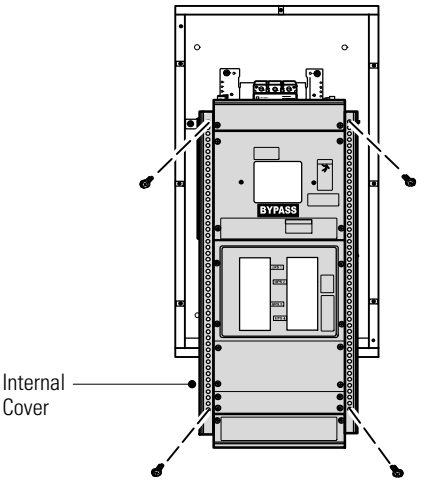

Figure 12. Version 1 Internal Cover

7. Punch holes for the conduit (AC input, UPS output, load connection, and maintenance bypass contact wires) using a Greenlee® punch or similar device.

8. Verify that the parallel bypass breaker is in the OFF position (see Figure 13).

9. Mount the parallel tie cabinet to the wall and install the conduit.

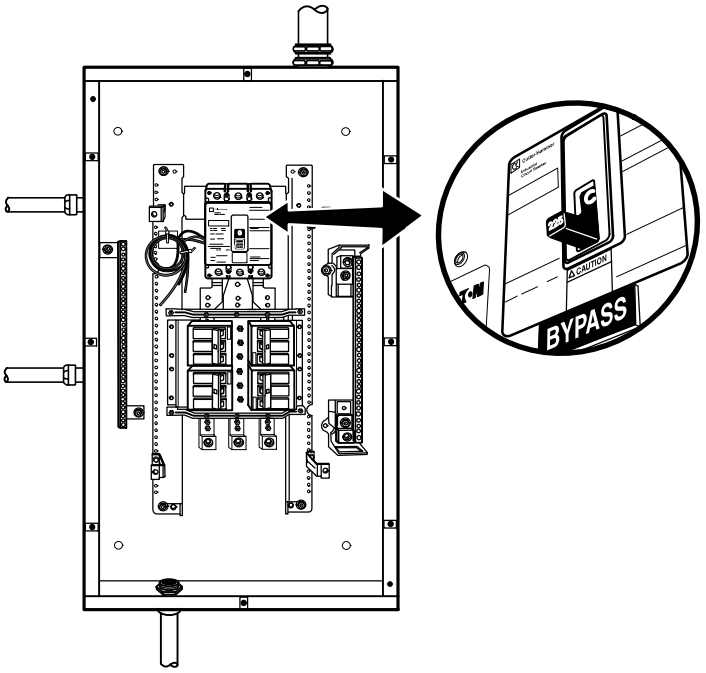

Figure 13. Version 1 Parallel Bypass Breaker

10. Verify that each UPS battery circuit breaker is in the OFF position (see Figure 14).

11. From each UPS, remove the UPS wiring access cover and one of the conduit landing plates and retain.

12. Punch two holes in the conduit landing plate for the input and output conduit using a Greenlee punch or similar device.

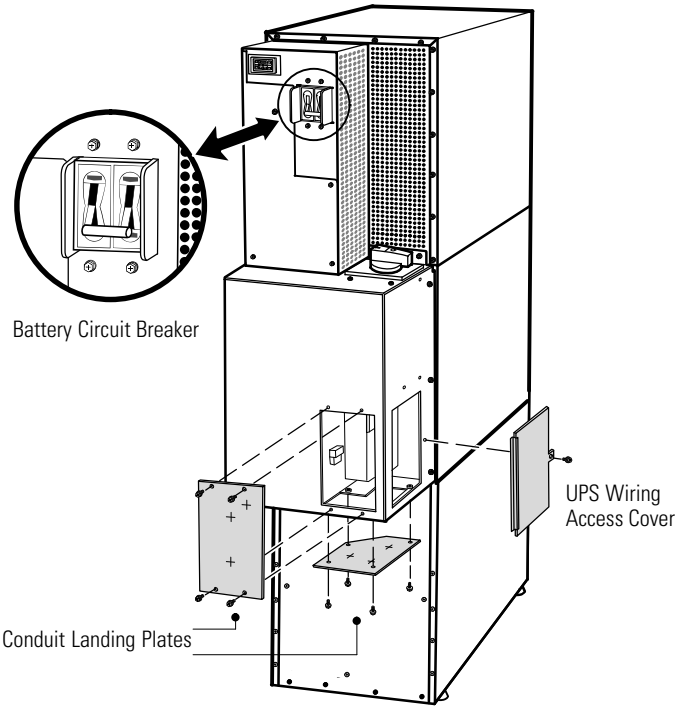

Figure 14. UPS Rear View (3-High Shown)

13. Hardwire the UPS input terminations.

See Table 1 for specifications and Figure 15 for a detailed view of the UPS terminal block.

NOTE *Input neutral must be wired for proper operation. Failure to connect an input neutral will void the warranty. If the optional input transformer is installed, an input neutral is not required.*

NOTE *The Eaton 9355 UPS UPS is a single-feed UPS only.*

Table 1. UPS Terminal Block Wiring

10 kVA Input Voltage	Wire Function	Input Circuit Breaker Size	L1, L2, L3, N Wire Size[1]	Ground Wire Size[1]	Tightening Torque	Conduit Size[2, 3] (Number of Conduits)
208	Input	45A	6 AWG	10 AWG	120 lb in (13.5 Nm)	1.00″ conduit (1)
220		45A	8 AWG	10 AWG		
208	Output		8 AWG	10 AWG	120 lb in (13.5 Nm)	1.00″ conduit (1)
220			8 AWG	10 AWG		
15 kVA Input Voltage	**Wire Function**	**Input Circuit Breaker Size**	**L1, L2, L3, N Wire Size[1]**	**Ground Wire Size[1]**	**Tightening Torque**	**Conduit Size[2, 3] (Number of Conduits)**
208	Input	60A	4 AWG	10 AWG	120 lb in (13.5 Nm)	1.25″ conduit (1)
220		60A	4 AWG	10 AWG		1.25″ conduit (1)
208	Output		6 AWG	10 AWG	120 lb in (13.5 Nm)	1.00″ conduit (1)
220			6 AWG	10 AWG		

[1] Use only 90°C-rated copper wire. Minimum wire size is based on 120/208 full load ratings applied to National Electrical Code (NEC) Table 310-16. Code may require a larger AWG size than shown in this table because of temperature, number of conductors in the conduit, or long service runs. Wire lengths should be the same size. Follow local requirements.

[2] Per NEC article 300-20(a), all three-phase conductors must be run in the same conduit. Neutral and ground must be run in the same conduit as the phase conductors.

[3] Conduit is sized to accommodate one neutral conductor the same size as the phase conductor and one #8 AWG ground conductor. If two neutral conductors or an oversized neutral conductor are to be installed, check the size of the conduit needed to accommodate the extra wire or size and use that conduit size in place of the conduit size listed. Conduit sizes were chosen from NEC Table C1, type letters RHH, RHW, RHW-2, TW, THW, THHW, THW-2.

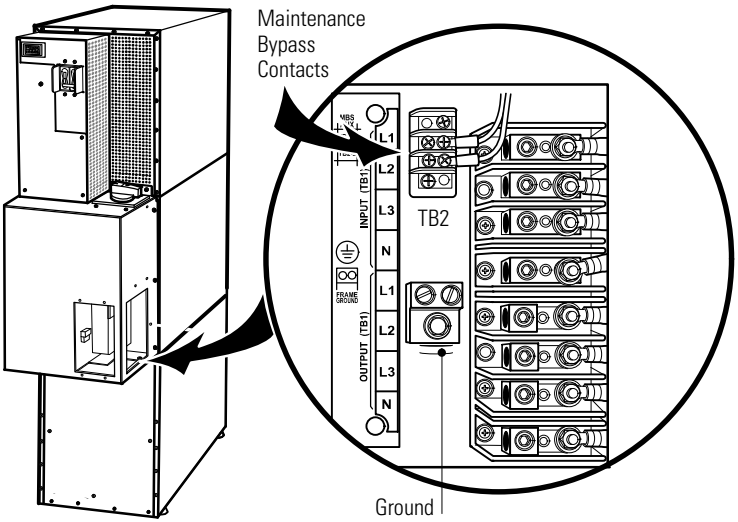

Figure 15. UPS Terminal Block (3-High Shown)

14. Hardwire the output terminations from the UPS to the parallel tie cabinet (see Figure 16).

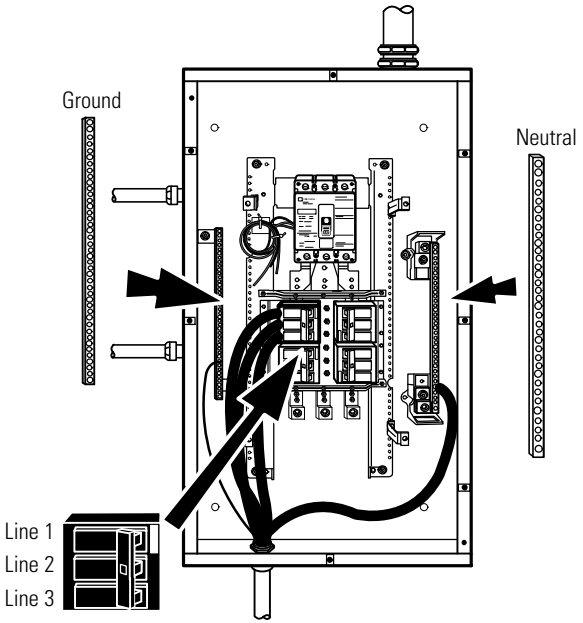

Figure 16. Version 1 UPS Output to Parallel Tie Cabinet Wiring

15. Hardwire the load to the parallel tie cabinet (see Figure 17).

16. Wire the maintenance bypass contacts and terminate to the maintenance bypass wires in the parallel tie cabinet (see Figure 15).

Connect the black and the red wire to TB2 on the UPS. Cap the blue wire.

NOTE *The maintenance bypass contacts are normally-open. To ensure proper bypass operation, DO NOT use the blue wire (it is normally-closed).*

17. Replace the UPS wiring access cover and conduit landing plate.

18. Repeat Steps 12 through 17 for each UPS.

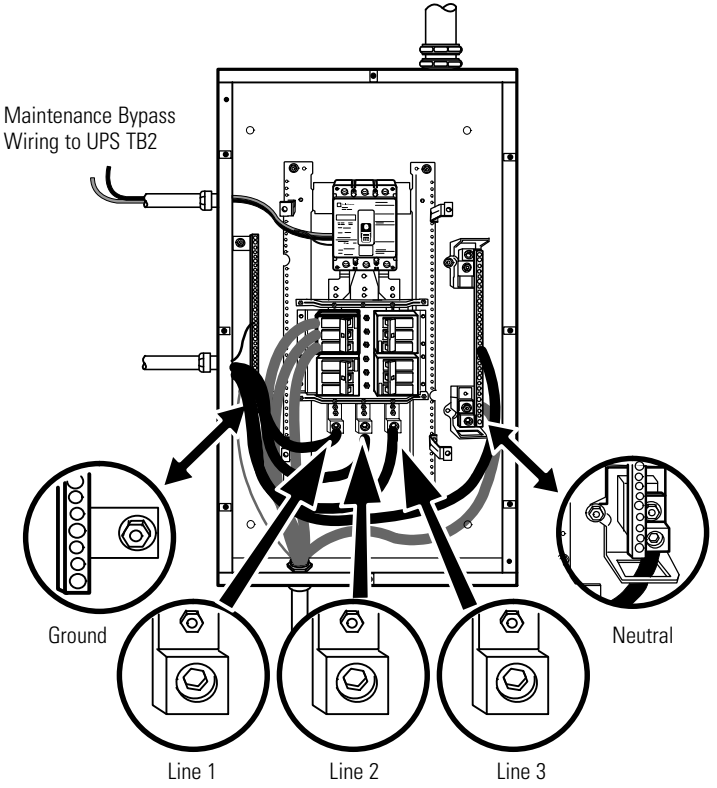

Figure 17. Version 1 Load Connections

19. Wire the AC input to the bypass breaker (see Figure 18).

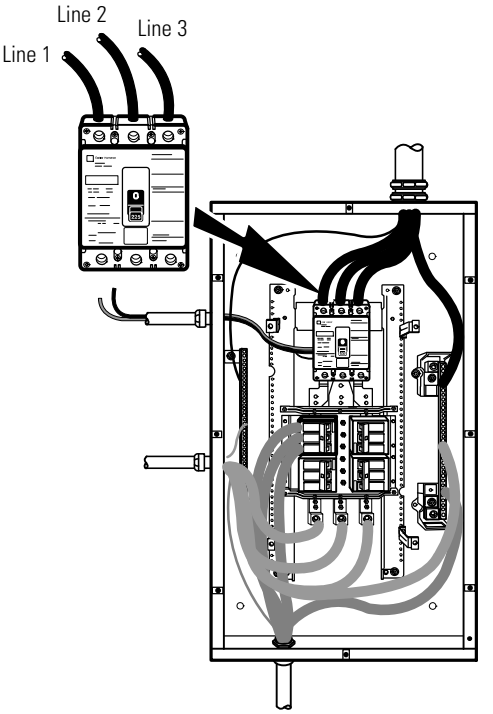

Figure 18. Version 1 Bypass AC Input Wiring

20. Verify the phase rotation for each UPS and the bypass input.

21. Reinstall the internal cover removed in Step 6.

22. Reinstall the parallel tie cabinet front cover removed in Step 5.

23. Continue to "Installing Options" on page 41.

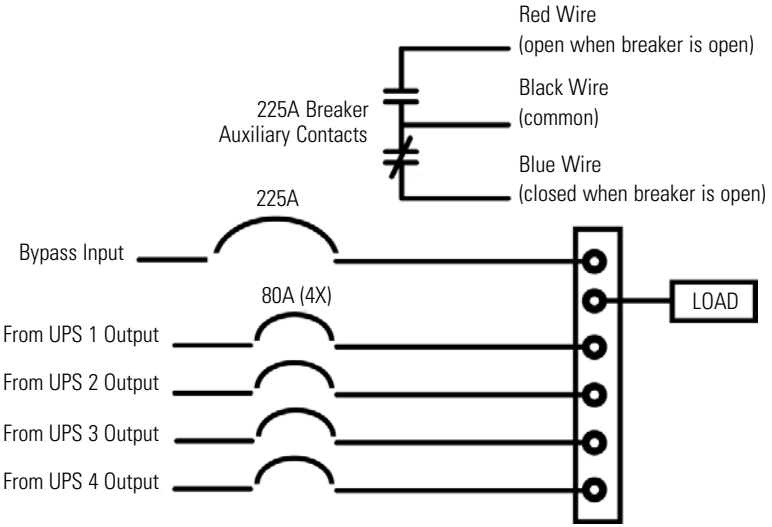

Figure 19. Version 1 Parallel Wiring Diagram

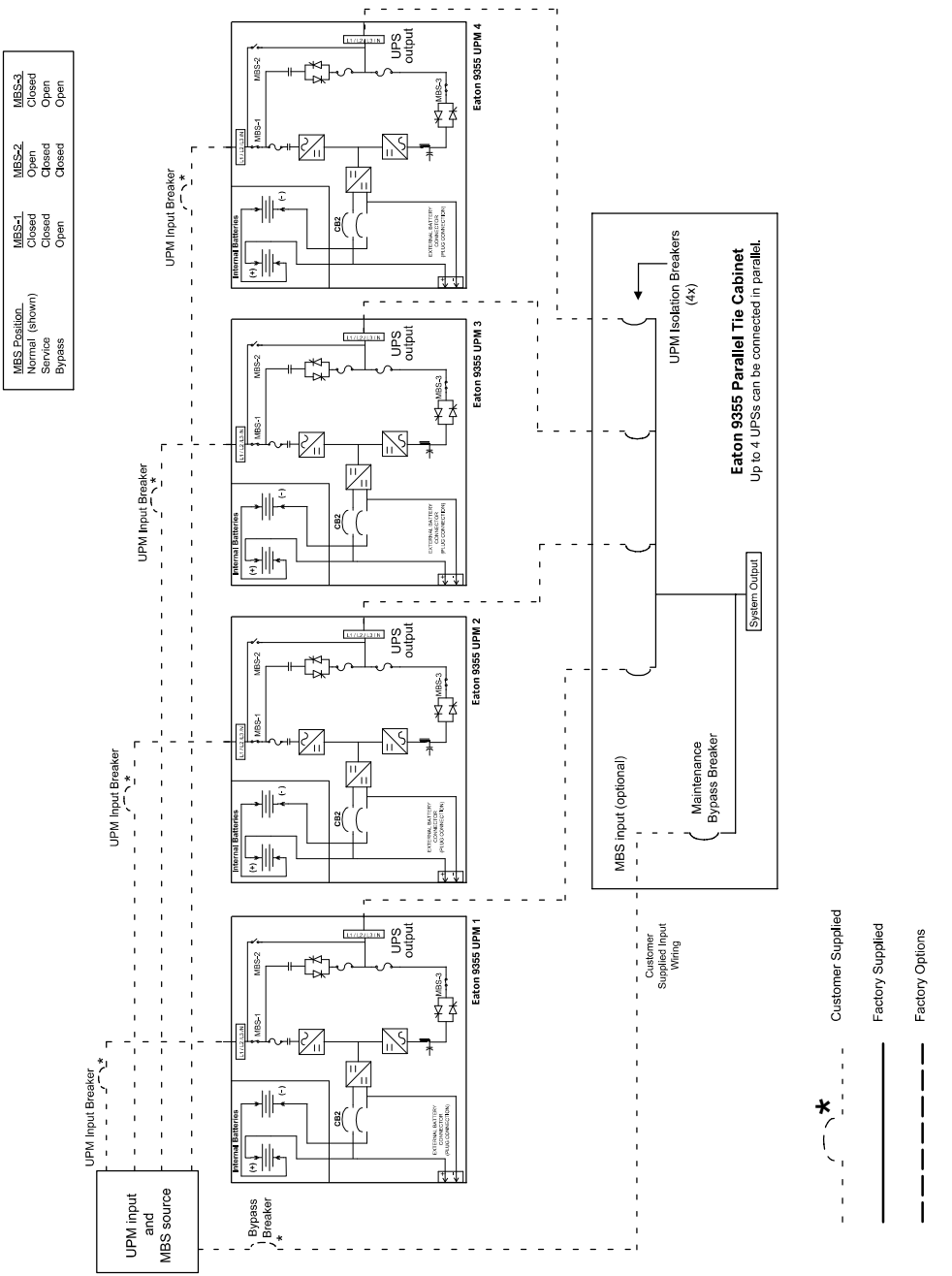

Figure 20. Version 1 Parallel UPS Schematic

Chapter 5 Version 2 Tie Cabinet Parallel Installation

The Eaton 9355 UPS UPS has the following power connections:

- 3-phase (L1, L2, and L3), neutral, and ground connection for rectifier/bypass input
- 3-phase (L1, L2, and L3), neutral, and ground connection for load output

The nominal input/output voltages are:

- 120/208 or 127/220 Vac

Output overcurrent protection and disconnect switch must be provided by others.

Figure 30 and Figure 32 beginning on page 39 show the oneline diagrams.

WARNING

Only qualified service personnel (such as a licensed electrician) should perform the UPS installation and initial startup. Risk of electrical shock.

To hardwire the parallel system:

1. Verify that the electrical connections to the installation site have been properly installed.
2. A wall-mounted, user-supplied, readily-accessible disconnection device must be incorporated in the input wiring.

   Compare the circuit breaker ratings to the ones in Table 2 on page 33.

NOTE *To accommodate the feature of easy system expandability, it is recommended that initial installation of the Eaton 9355 UPS UPS contain wiring to support the maximum capacity of the UPS cabinet.*

3. Switch off utility power to the distribution point where the parallel tie cabinet and UPSs will be connected. Be absolutely sure there is no power.

4. Determine your equipment's grounding requirements according to your local electrical code.

5. Unfasten the bypass cabinet front door latch and swing the door open (see Figure 21).

6. Follow the instructions on the inside of the door to open or remove the front cover (see Figure 21 and Figure 22).

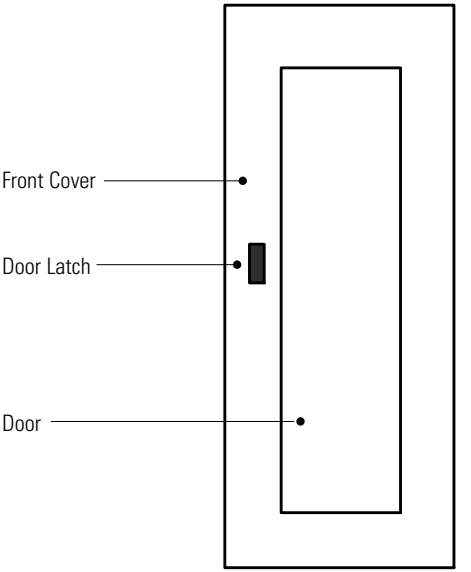

Figure 21. Version 2 Parallel Tie Cabinet Front Door and Cover

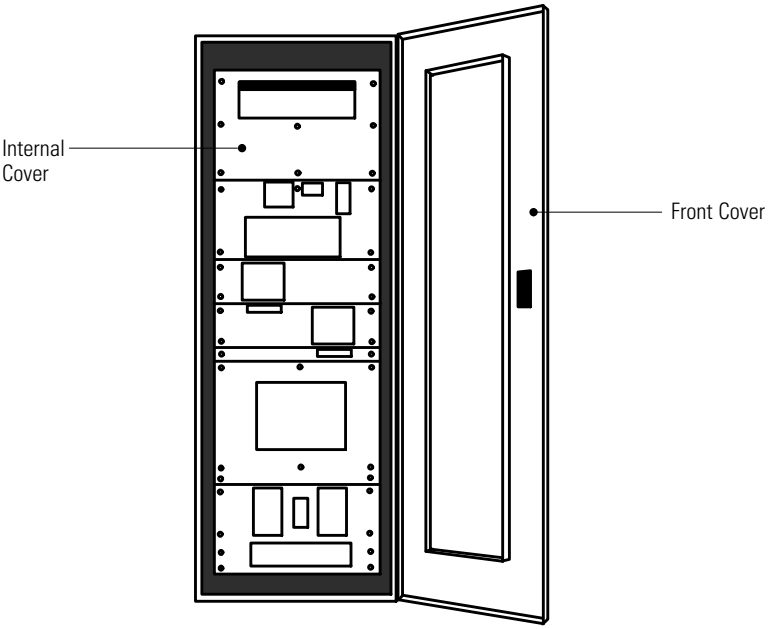

Figure 22. Version 2 Parallel Tie Cabinet Front Cover Open

7. Remove the internal cover to gain access to the breakers (see Figure 23).

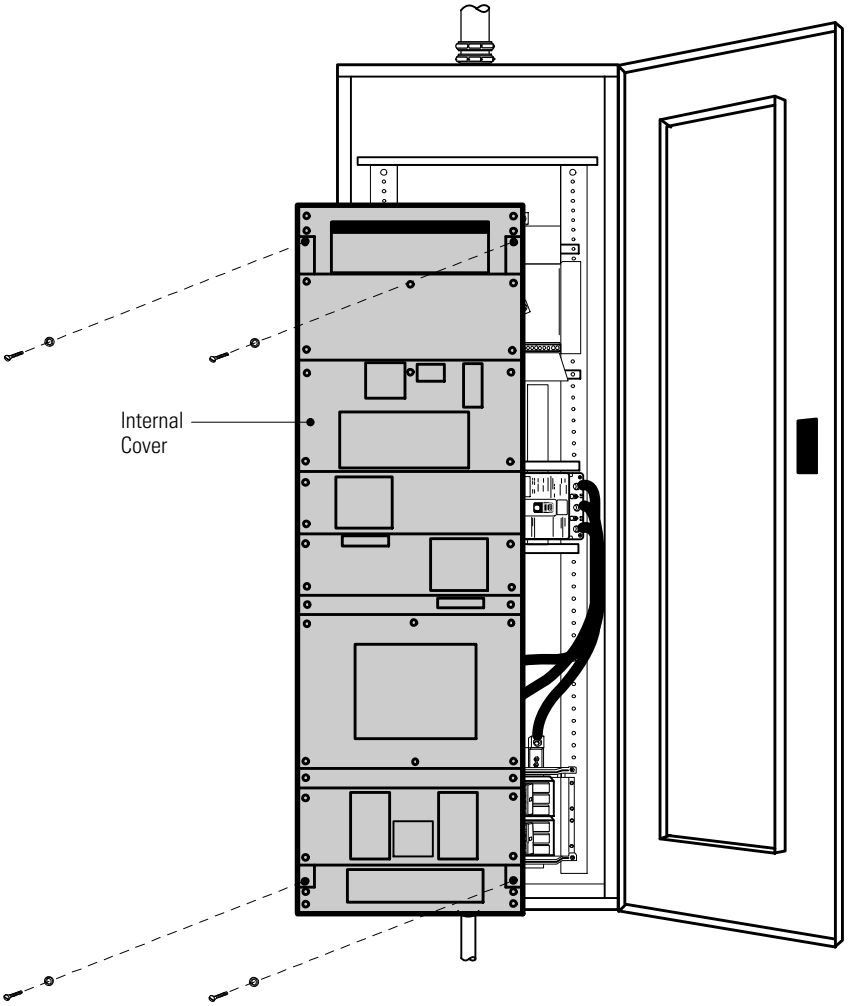

Figure 23. Version 2 Parrel Tie Cabinet Internal Cover

8. Punch holes for the conduit (AC input, UPS output, load connection, and maintenance bypass contact wires) using a Greenlee® punch or similar device.

9. Verify that the parallel bypass breaker is in the OFF position (see Figure 24).

10. Mount the parallel tie cabinet to the wall and install the conduit.

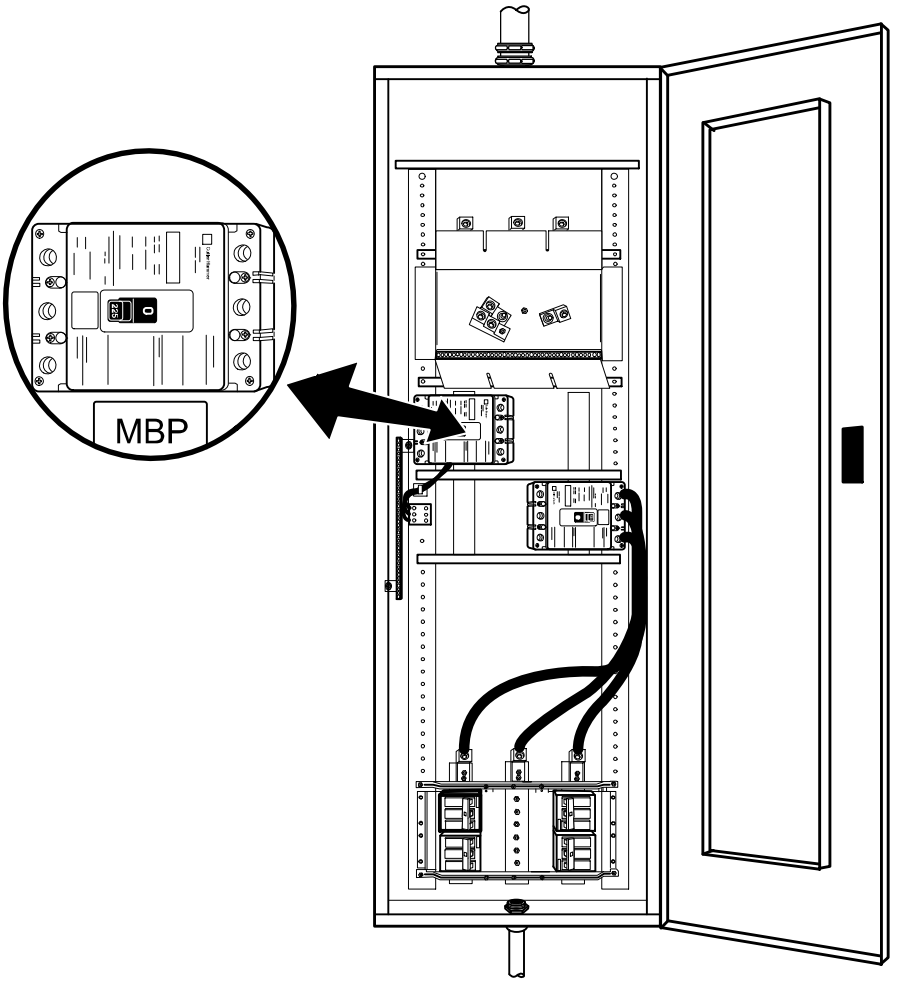

Figure 24. Version 2 Parallel Tie Cabinet Bypass Breaker

11. Verify that each UPS battery circuit breaker is in the OFF position (see Figure 25).

12. From each UPS, remove the UPS wiring access cover and one of the conduit landing plates and retain.

13. Punch two holes in the conduit landing plate for the input and output conduit using a Greenlee punch or similar device.

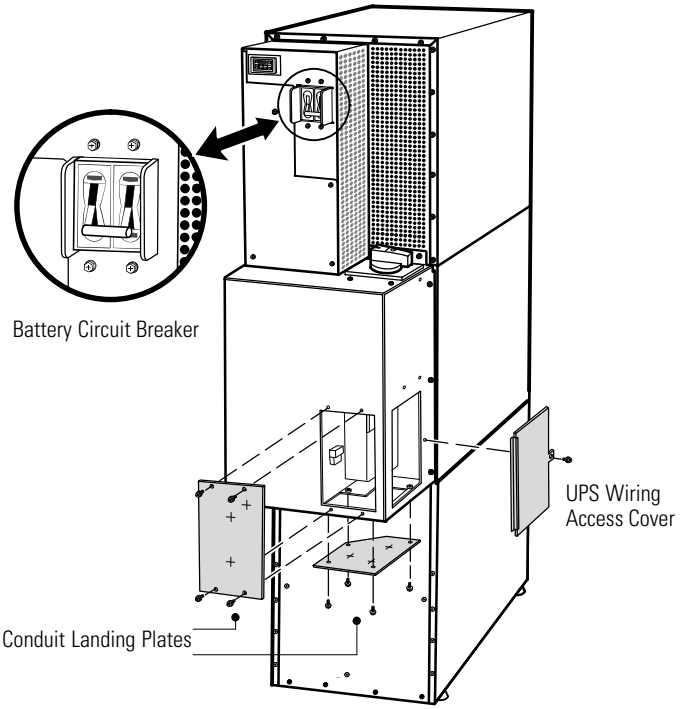

Figure 25. UPS Rear View (3-High Shown)

14. Hardwire the UPS input terminations.

See Table 2 for specifications and Figure 26 for a detailed view of the UPS terminal block.

NOTE *Input neutral must be wired for proper operation. Failure to connect an input neutral will void the warranty. If the optional input transformer is installed, an input neutral is not required.*

NOTE *The Eaton 9355 UPS UPS is a single-feed UPS only.*

Table 2. UPS Terminal Block Wiring

10 kVA Input Voltage	Wire Function	Input Circuit Breaker Size	L1, L2, L3, N Wire Size[1]	Ground Wire Size[1]	Tightening Torque	Conduit Size[2, 3] (Number of Conduits)
208	Input	45A	6 AWG	10 AWG	120 lb in (13.5 Nm)	1.00" conduit (1)
220		45A	8 AWG	10 AWG		
208	Output		8 AWG	10 AWG	120 lb in (13.5 Nm)	1.00" conduit (1)
220			8 AWG	10 AWG		
15 kVA Input Voltage	**Wire Function**	**Input Circuit Breaker Size**	**L1, L2, L3, N Wire Size[1]**	**Ground Wire Size[1]**	**Tightening Torque**	**Conduit Size[2, 3] (Number of Conduits)**
208	Input	60A	4 AWG	10 AWG	120 lb in (13.5 Nm)	1.25" conduit (1)
220		60A	4 AWG	10 AWG		1.25" conduit (1)
208	Output		6 AWG	10 AWG	120 lb in (13.5 Nm)	1.00" conduit (1)
220			6 AWG	10 AWG		

[1] Use only 90°C-rated copper wire. Minimum wire size is based on 120/208 full load ratings applied to NEC Code Table 310-16. Code may require a larger AWG size than shown in this table because of temperature, number of conductors in the conduit, or long service runs. Wire lengths should be the same size. Follow local requirements.

[2] Per NEC article 300-20(a), all three-phase conductors must be run in the same conduit. Neutral and ground must be run in the same conduit as the phase conductors.

[3] Conduit is sized to accommodate one neutral conductor the same size as the phase conductor and one #8 AWG ground conductor. If two neutral conductors or an oversized neutral conductor are to be installed, check the size of the conduit needed to accommodate the extra wire or size and use that conduit size in place of the conduit size listed. Conduit sizes were chosen from NEC Table C1, type letters RHH, RHW, RHW-2, TW, THW, THHW, THW-2.

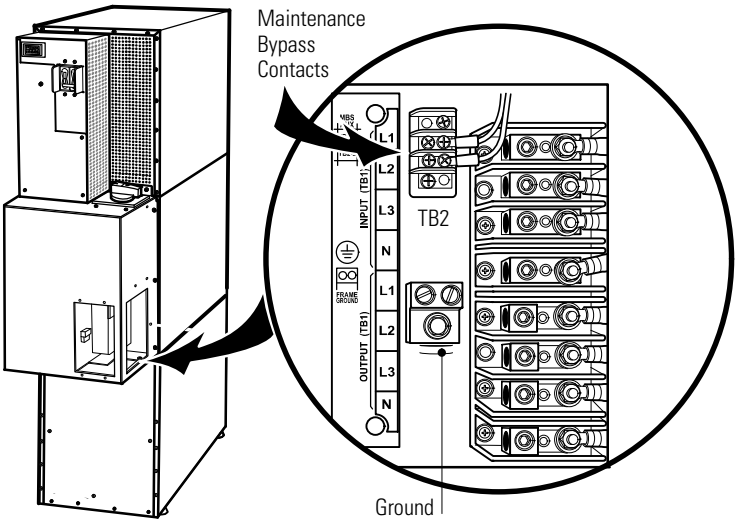

Figure 26. UPS Terminal Block (3-High Shown)

15. Hardwire the output terminations from the UPS to the parallel tie cabinet (see Figure 27).

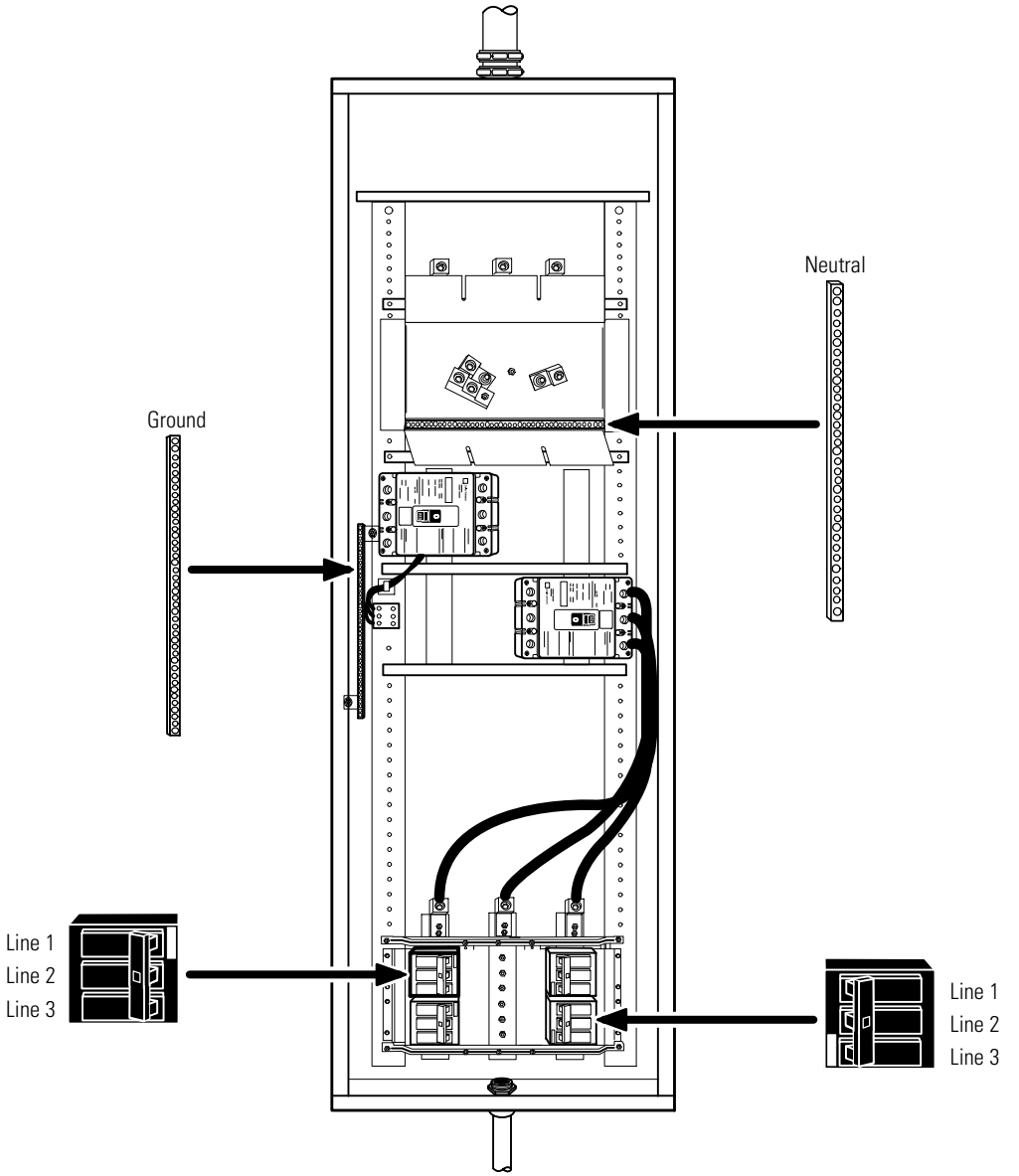

Figure 27. Version 2 Tie Cabinet UPS Output to Parallel Tie Wiring

16. Hardwire the load to the parallel tie cabinet (see Figure 28).

17. Wire the maintenance bypass contacts and terminate to the maintenance bypass wires in the parallel tie cabinet (see Figure 26).

Connect the black and the red wires from the terminal block on the Tie Cabinet to TB2 on the UPS.

NOTE *The maintenance bypass contacts are normally-open. To ensure proper bypass operation, DO NOT use the blue wire (it is normally-closed).*

18. Replace the UPS wiring access cover and conduit landing plate.

19. Repeat Steps 13 through 18 for each UPS.

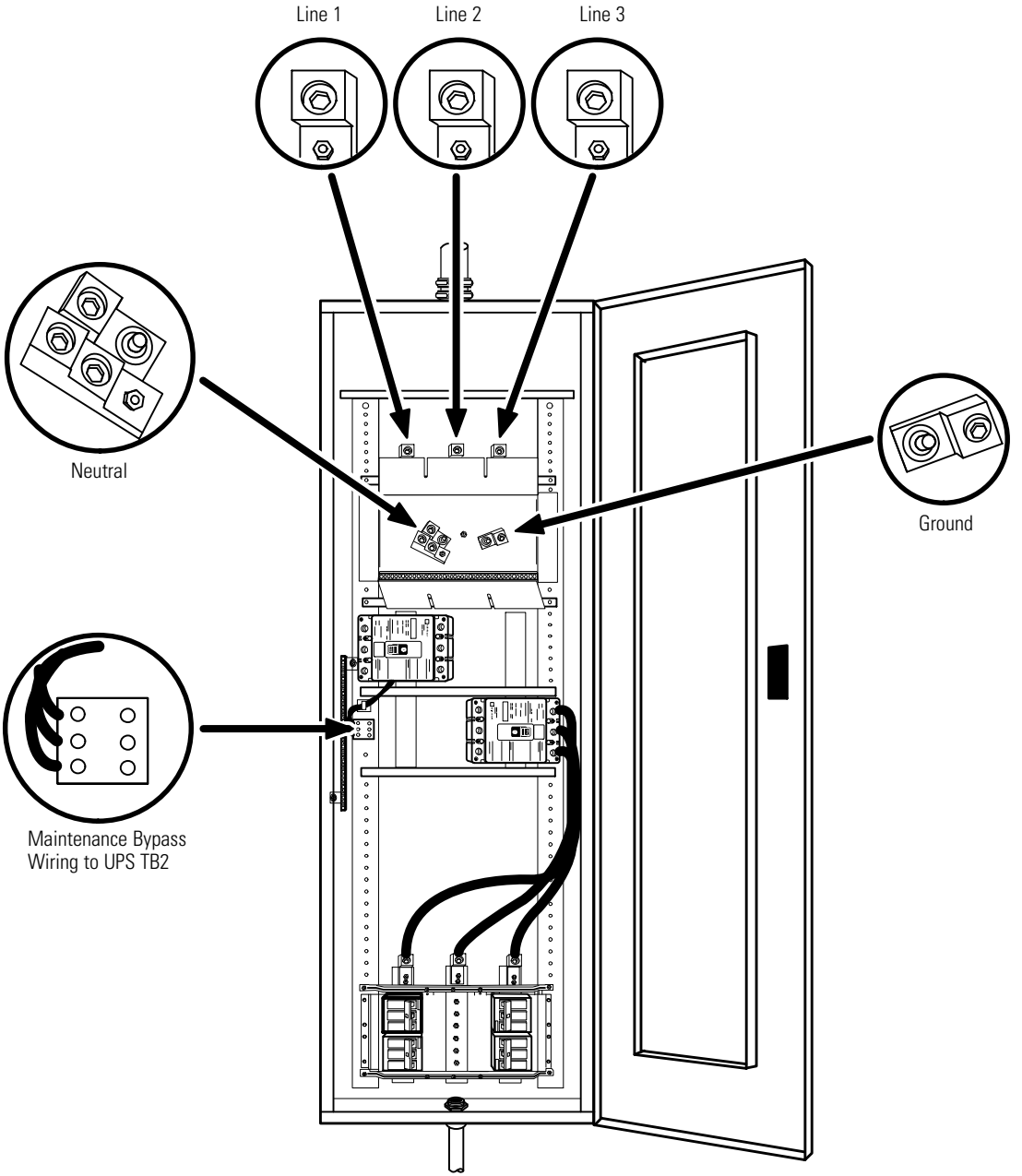

Figure 28. Version 2 Tie Cabinet Load Connections

20. Wire the AC input to the bypass breaker (see Figure 29).

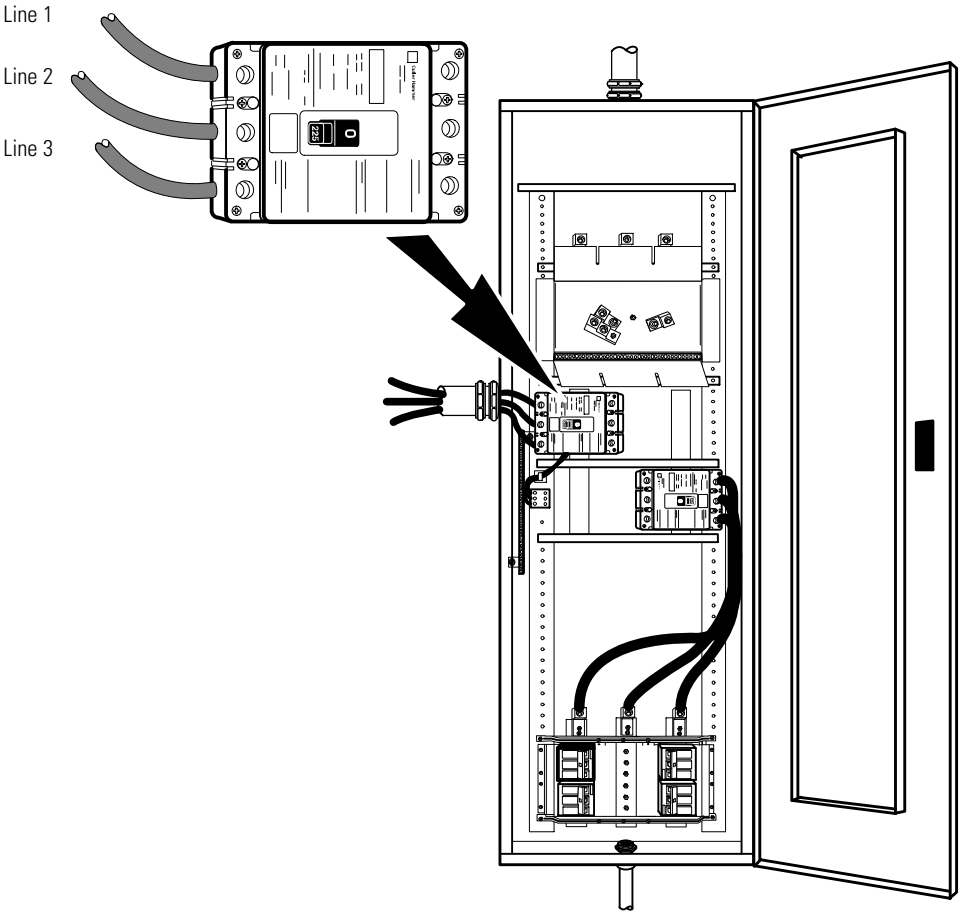

Figure 29. Version 2 Tie Cabinet Bypass AC Input Wiring

21. Verify the phase rotation for each UPS and the bypass input.

22. Reinstall the internal cover removed in Step 7.

23. Reinstall the parallel tie cabinet front cover removed in Step 5.

24. Continue to "Installing Options" on page 41.

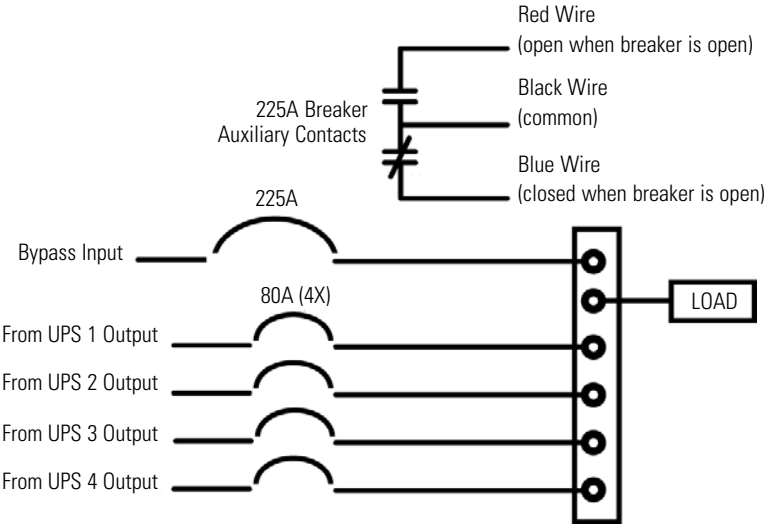

Figure 30. Version 2 Tie Cabinet Parallel Wiring Diagram – without Maitenance Isolation Switch (MIS)

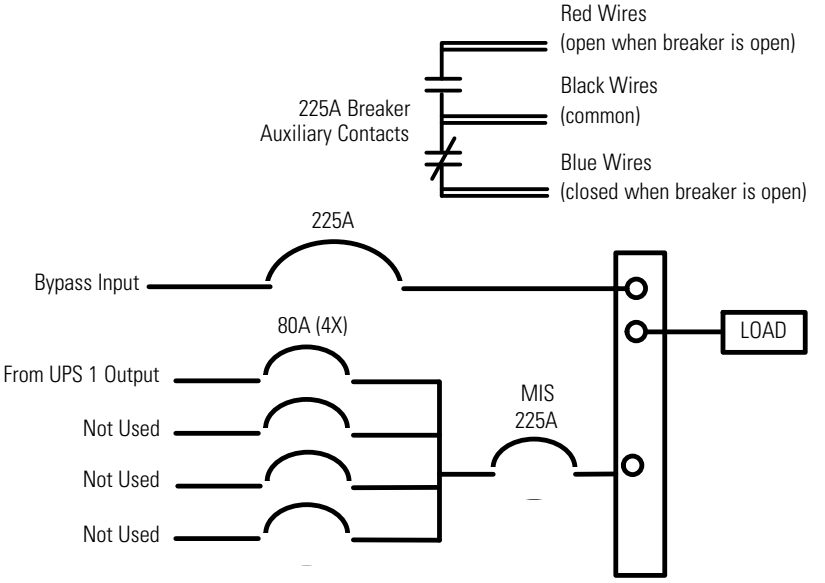

Figure 31. Version 2 Bypass Cabinet Bypass Wiring Diagram – with MIS

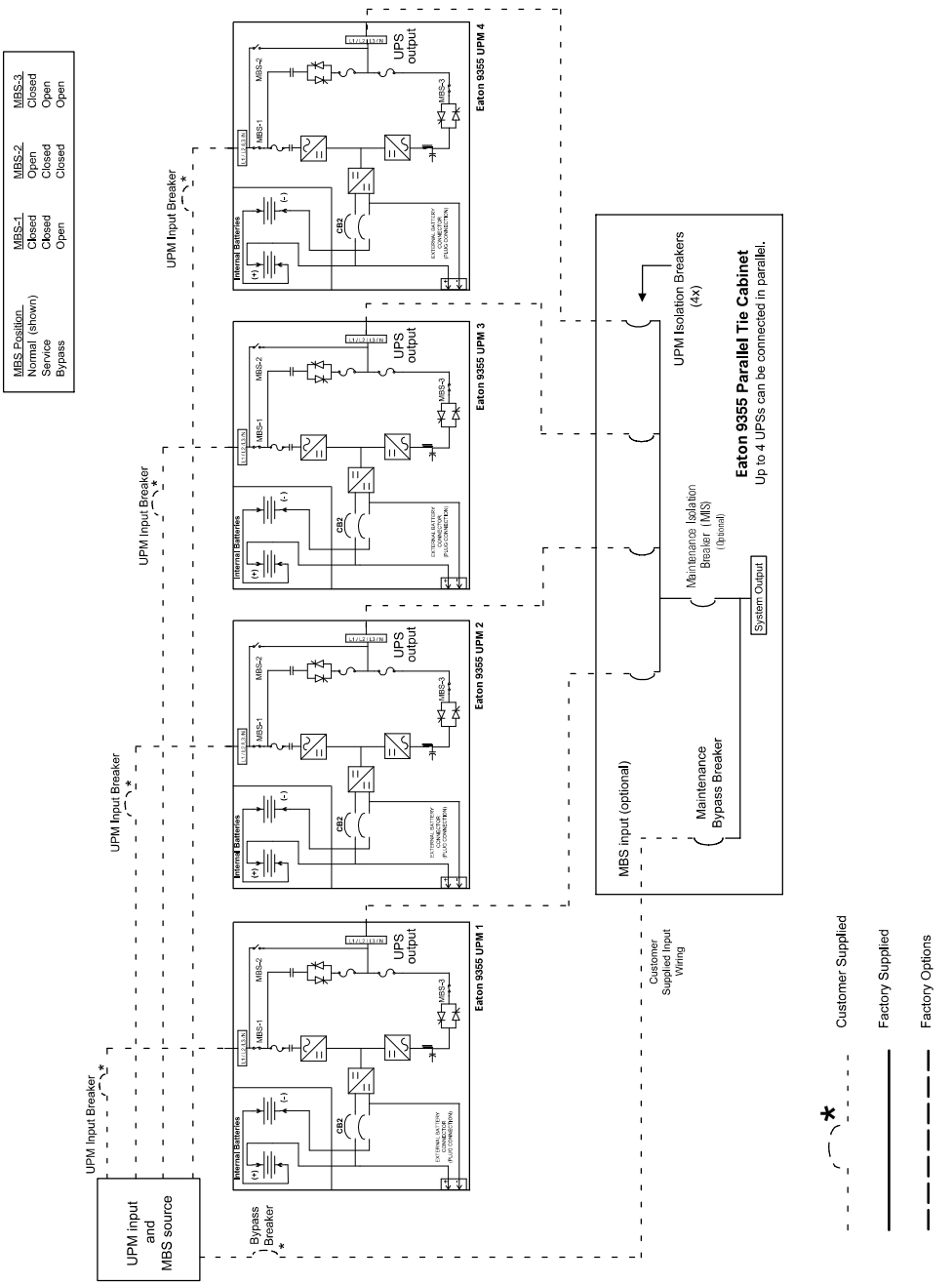

Figure 32. Version 2 Tie Cabinet Parallel UPS Schematic

Chapter 6 Installing Options

This section describes the Powerware Hot Sync CAN Bridge Card.

For other options, such as additional X-Slot® cards, LanSafe® Power Management Software, remote emergency power-off (REPO), relay output contacts, or programmable signal inputs, refer to the Eaton 9355 UPS (10/15 kVA) User's Guide.

Figure 33 shows the location of the communication options and control terminals on the UPS.

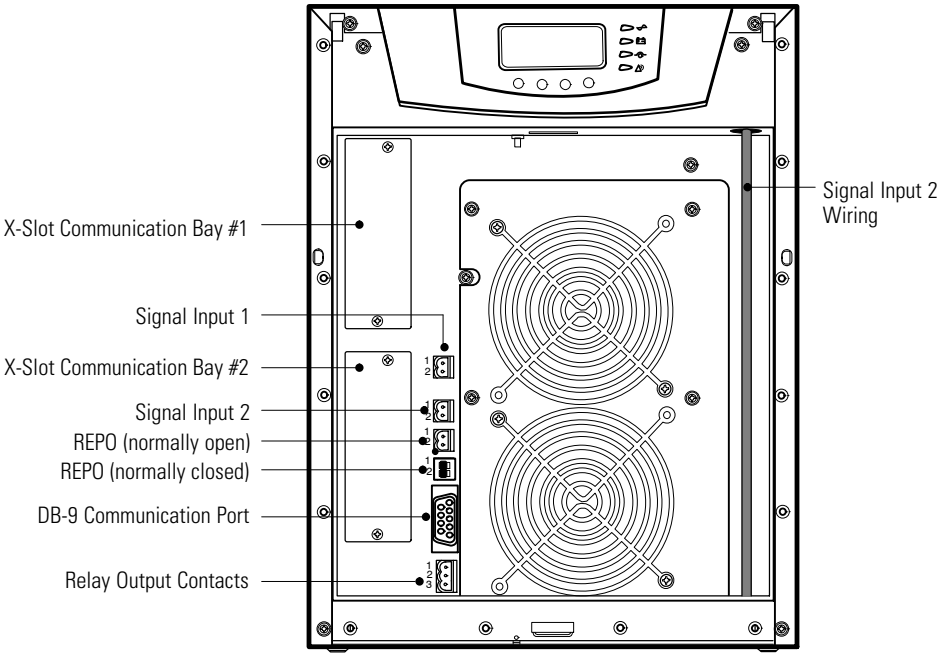

Figure 33. Communication Options and Control Terminals

Powerware Hot Sync CAN Bridge Card

The Powerware Hot Sync CAN Bridge Card, shown in Figure 34, can be installed to provide connectivity for operational mode control and metering of a parallel system at any UPS in the system.

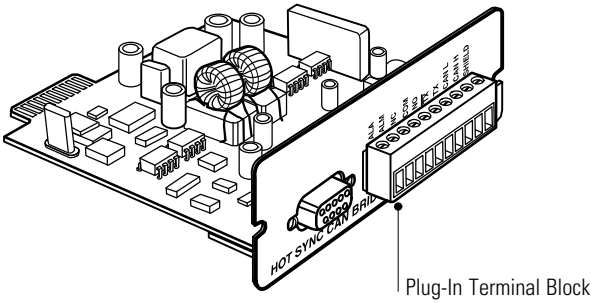

Figure 34. Powerware Hot Sync® CAN Bridge Card

To install the Powerware Hot Sync CAN Bridge Card:

1. Remove the front covers of all cabinets, starting with the top cabinet.

Press and release the handle latch at the bottom of each cover and then lift the cover up and off the cabinet (see Figure 35).

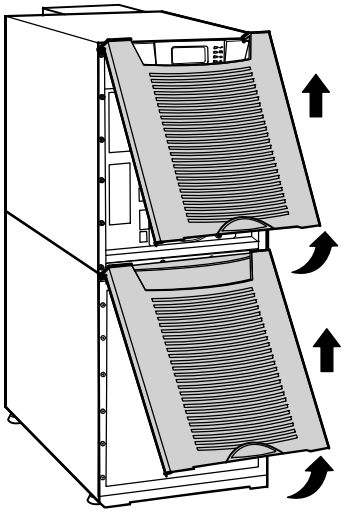

Figure 35. Removing the Front Covers

2. Strip shielded, four-wire, twisted-pair wire for CAN Bridge Card wiring. Recommended wire size is 18 AWG maximum.

3. Install the CAN Bridge Card wiring between each UPS (see Figure 36). Verify correct polarity for Pins 8 and 9:

   - Connect SHIELD Pin 10 on all cards together.
   - Connect CAN H Pin 9 and CAN L Pin 8 (twisted pair) on all cards together.
   - Connect COM Pin 4 and NC Pin 3 (twisted pair) on all cards together.

4. Wire the factory-installed pull-chain wiring to Signal Input 2 on each UPS and daisy chain the wiring to each UPS as shown in Figure 36. Verify correct polarity:

   - Connect COM Pin 4 to Signal Input 2 Pin 1 on each UPS.
   - Connect NC Pin 3 to Signal Input 2 Pin 2 on each UPS.

CAUTION

If polarity or wiring is not correct, the parallel system does not operate normally. For example, when shutting down one UPS, the remaining UPS transfers the load to bypass instead of supporting the load. Verify all CAN Bridge Card wiring is correct for proper operation.

NOTE *Signal Input 2 can still be used for building alarms; it is automatically rerouted to the CAN Bridge Card.*

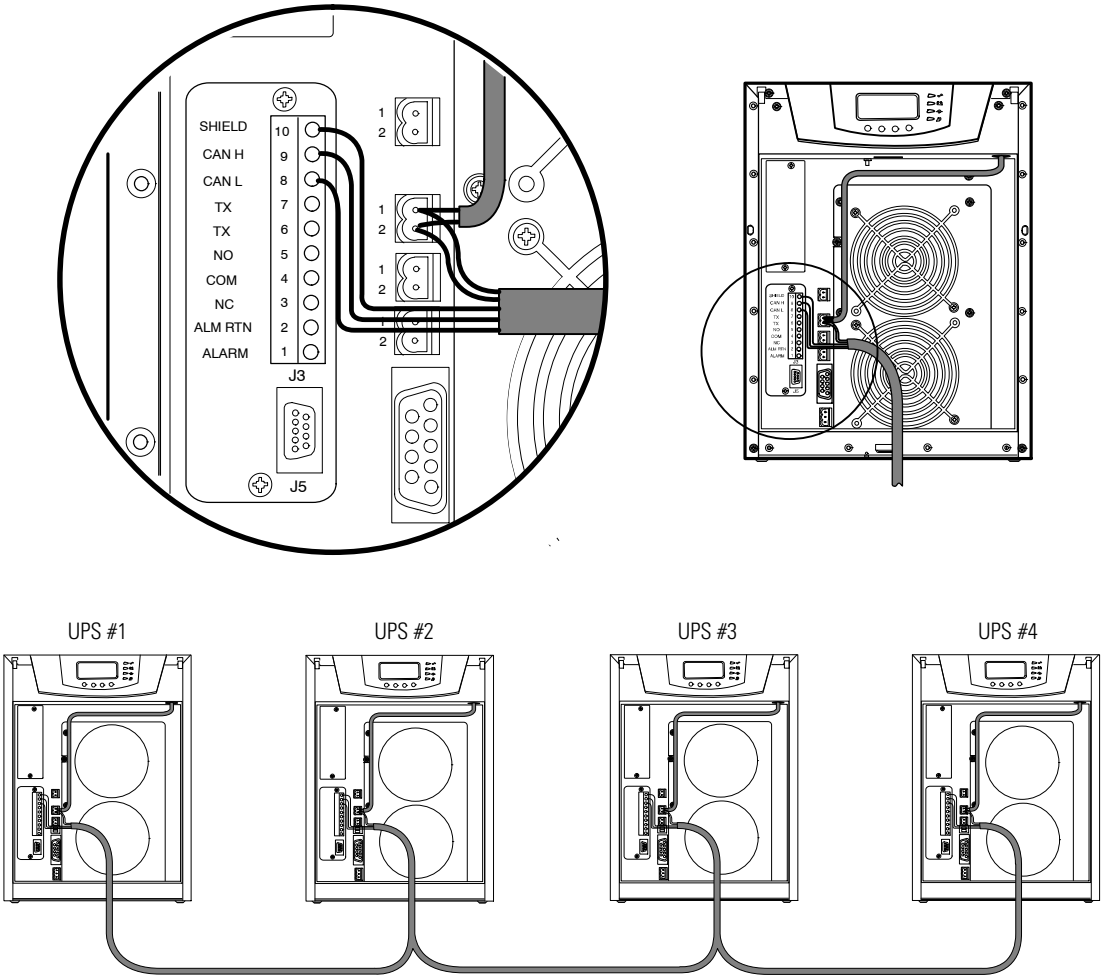

Figure 36. CAN Bridge Card Wiring

5. On the bottom cover (and also the middle cover if 3-high), remove a knockout tab in the top edge of the cover for each cable:

With wire cutters, cut either side of the tab and twist down to remove the tab (see Figure 37).

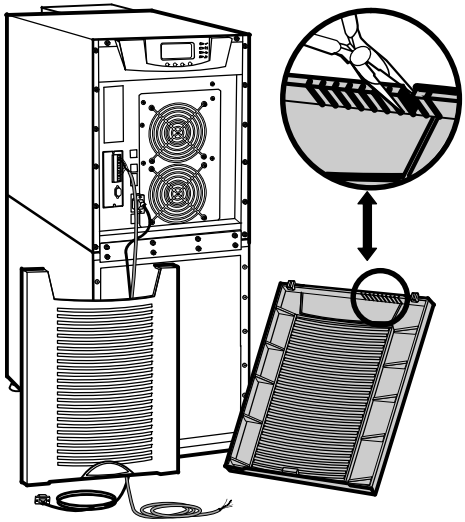

Figure 37. Removing Knockout Tabs

6. Route the cable(s) to the approximate location of the cover access holes.

7. Reinstall the front covers, starting with the bottom cabinet (see Figure 38).

Hang the top edge of the cover on the cabinet first, then lower the bottom edge and snap into place. Verify that the cables fit in the access holes in the covers.

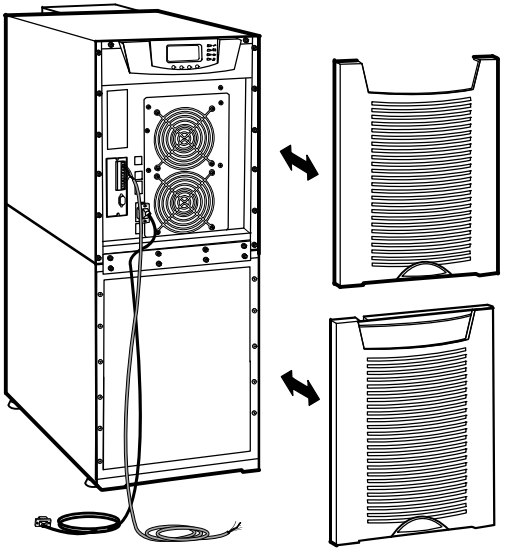

Figure 38. Reinstalling the Front Covers

8. Continue to "Stabilizing the Cabinet" on page 47 to complete the parallel UPS installation.

NOTE *After UPS startup, ensure maximum battery runtime by configuring the UPS for the correct number of EBMs (see page 61).*

Chapter 7 Stabilizing the Cabinet

NOTE *For seismic installations, you MUST order and install an Eaton 9355 UPS UPS seismic kit; do not use the following instructions.*

NOTE *For non-seismic installations, you MUST install the stabilizing bracket on all 3-high cabinets. The stabilizing bracket is optional for 2-high cabinets.*

To stabilize the cabinet(s):

1. Lower the leveling feet to prevent the cabinet from rolling.

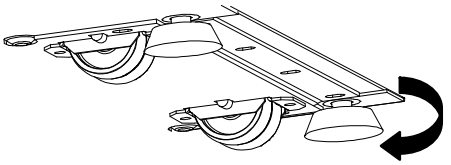

Figure 39. Lowering the Leveling Feet

2. Attach the stabilizing bracket to the bottom of the cabinet rear panel using the retained hardware from the shipping pallet according to the cabinet configuration:
   - For one cabinet, see Figure 40.
   - For two cabinets, see Figure 41.
   - For three cabinets, see Figure 42.

NOTE *No more than three cabinets can be attached together. For four cabinets, use two of the two-cabinet installations. For five cabinets, use one three-cabinet and one two-cabinet installation.*

3. Use the holes and slots in the bottom of the bracket to attach the cabinet to the flooring if desired.
4. Continue to one of the following sections:
   - "Extended Battery Module Installation" on page 51 to install optional EBMs.
   - "Operation" on page 55 to start up the parallel UPS system.

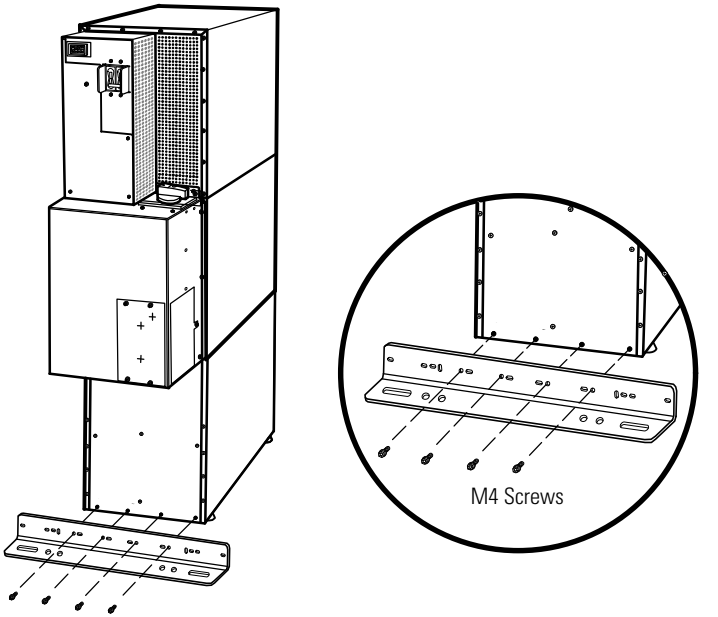

Figure 40. Stabilizing Bracket with One Cabinet

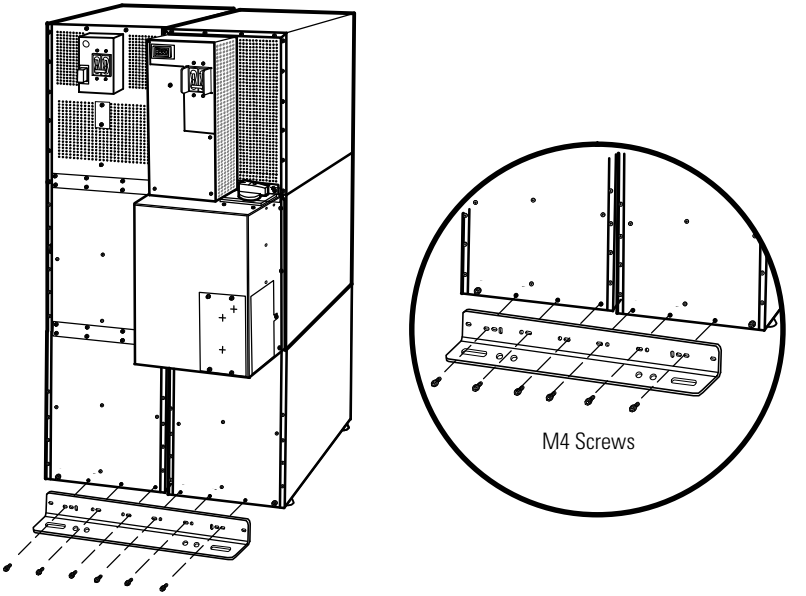

Figure 41. Stabilizing Bracket with Two Cabinets

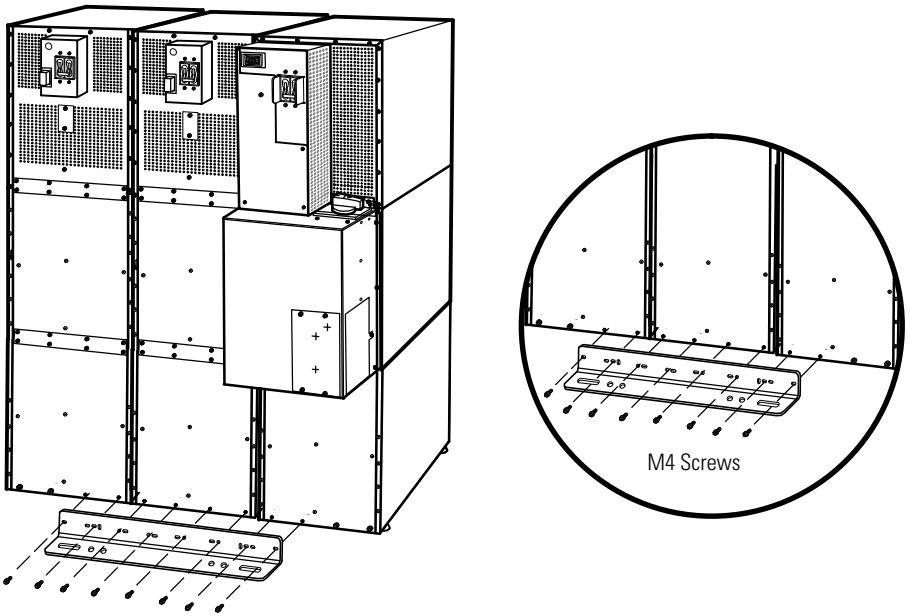

Figure 42. Stabilizing Bracket with Three Cabinets

Chapter 8 Extended Battery Module Installation

NOTE *A maximum of 22 battery strings can be installed in one configuration, including UPS batteries (4 EBM-64 models or 3 EBM-96 models). UPS-32 models contain 2 strings; UPS-64 models contain 4 strings; EBM-64 models contain 4 strings; and EBM-96 models contain 6 strings.*

NOTE *For non-seismic installations, you MUST install the stabilizing bracket on all 3-high cabinets. The stabilizing bracket is optional for 2-high cabinets.*

NOTE *In a parallel system, each UPS should have the same number of Extended Battery Modules (EBMs) to ensure equivalent runtimes.*

To install the optional EBM:

1. Position the EBM adjacent to the next cabinet.
2. Verify that all battery circuit breakers are in the OFF position (see Figure 43).
3. Remove the two ground straps from the EBM rear panel.
4. Install one ground strap between the UPS and EBM rear panels as shown in Figure 43.
5. If additional EBMs are installed, attach another ground strap between the first and second EBM as shown in Figure 43. Repeat for each additional EBM.
6. Plug the EBM cable into the UPS battery connector.
7. If additional EBMs are installed, plug the EBM cable of the second cabinet into the battery connector on the first EBM. Repeat for each additional EBM.

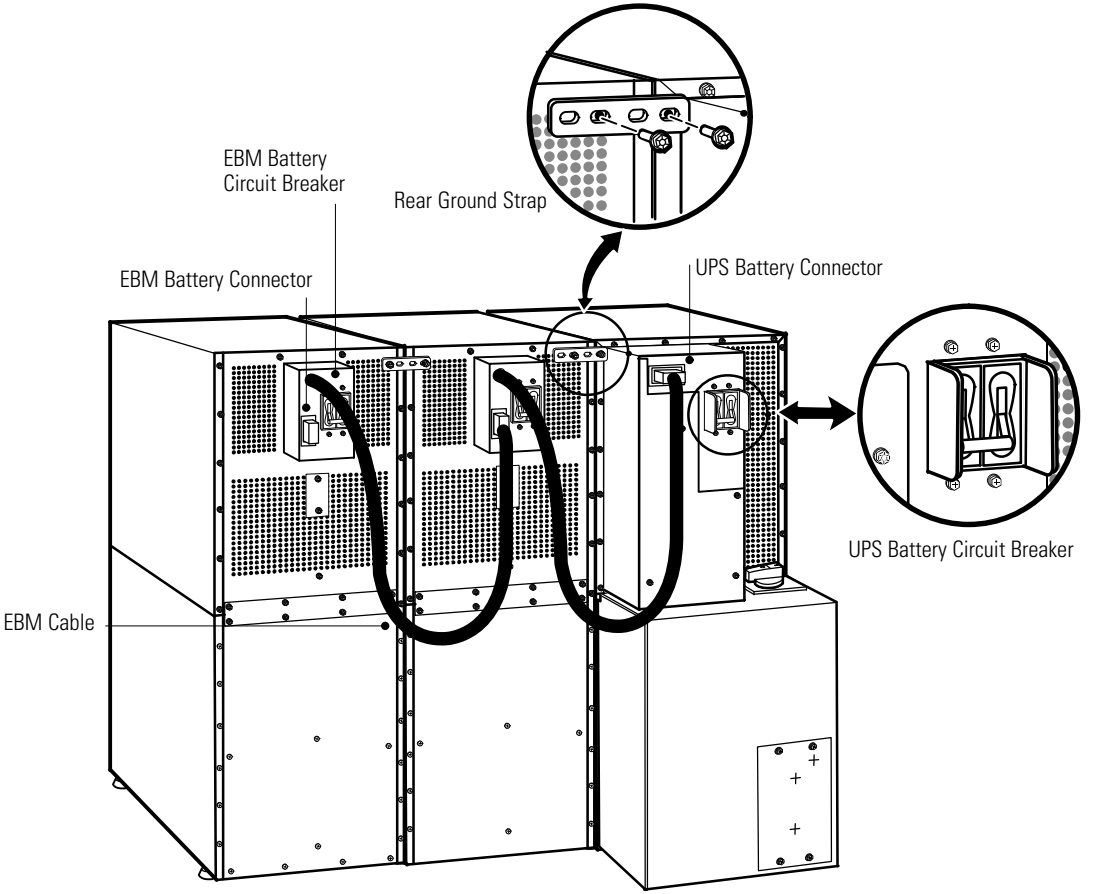

Figure 43. Typical EBM Installation (2-High Cabinets Shown)

8. Remove the top front covers of all cabinets.

Press and release the handle latch at the bottom of the cover and then lift the cover up and off the cabinet.

9. Install the remaining ground straps between each cabinet (see Figure 44).

10. Reinstall the top front covers removed in Step 8.

Hang the top edge of the cover on the cabinet first, then lower the bottom edge and snap into place.

11. Continue to "Operation" on page 55 to start up the UPS.

NOTE *After UPS startup, ensure maximum battery runtime by configuring the UPS for the correct number of EBMs (see page 61).*

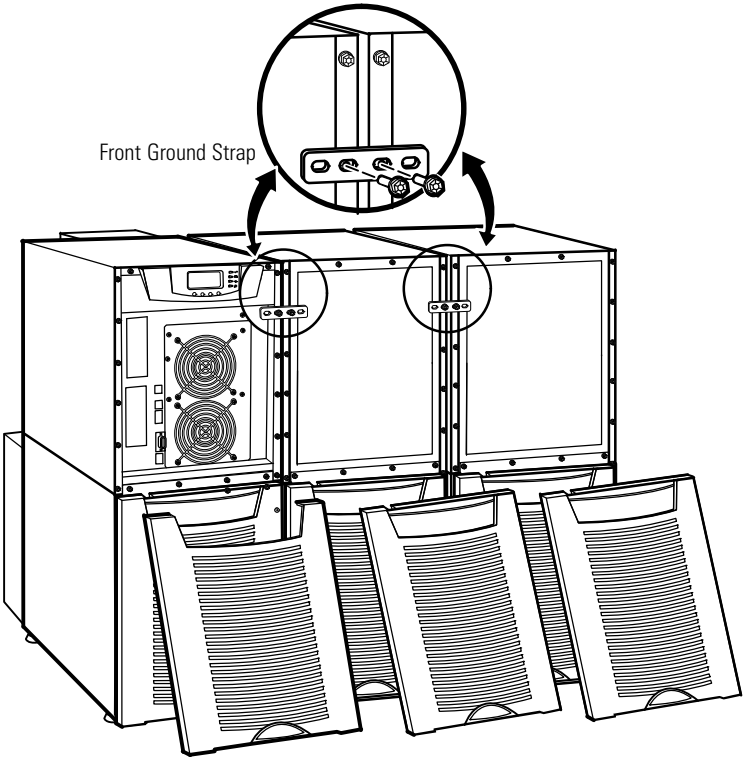

Figure 44. Front Ground Strap Installation (2-High Cabinets Shown)

Chapter 9 Operation

This chapter contains information on how to use the Eaton 9355 UPS UPS, including front panel operation, UPS startup and shutdown, and configuring the UPS for Extended Battery Modules (EBMs).

Control Panel Functions

The UPS has a four-button graphical LCD with backlight. It provides useful information about the UPS itself, load status, events, measurements, and settings (see Figure 45).

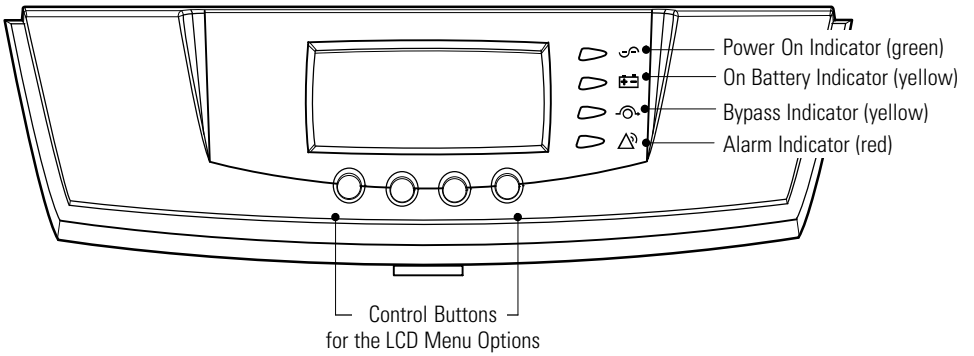

Figure 45. Eaton 9355 UPS UPS Control Panel

The following table shows the indicator status and description.

Indicator	Status	Description
Green	On	The UPS is operating normally.
	Flashing	• The UPS is starting up or is shut down and waiting for power to return. • A new information message is active. • Bypass is not available.
	Off	The UPS is turned off and will not turn on automatically.
Yellow	On	The UPS is in Battery mode.
Yellow	On	The UPS is in Bypass mode.
Red	On	The UPS has an active alarm.
	Flashing	There is a new UPS alarm condition. See "Troubleshooting" on page 67 for additional information.

Changing the Language

Press and hold the first button on the left for approximately five seconds to select the language menu. This action is possible from any LCD menu screen.

Display Functions

As the default or after 15 minutes of inactivity, the LCD displays the selectable startup screen. The default is the Eaton logo and can be changed to the Mimic screen in the User Settings menu.

The backlit LCD automatically dims after a long period of inactivity. Press any button to restore the screen.

Use the two middle buttons (↑ and ↓) to scroll through the menu structure. Press the → button to enter a submenu. Press the ↵ button to select an option. Press the ESC button to cancel or return to the previous menu.

The following table shows the basic menu structure.

Table 3. Menu Map for Display Functions

Main Menu	Submenu	Display Information or Menu Function
UPS Status		System normal / Battery floating UPS in Parallel mode / Parallel Unit Number x / Units on CAN Bus / Units on load
Event Log		Displays up to 127 events and alarms
Measurements	Parallel System	Voltage [by unit] / Voltage [Parallel total] / Output Voltage: L-N / Output Voltage L-L / Output Current / Output Frequency / Output Power
	Output	L-N and L-L / Current / Frequency / Power
	Battery	Voltage / Current / Runtime
	Input	L-N and L-L / Current / Frequency
	Bypass	L-N and L-L / Frequency
Control	Go to Bypass Mode	Transfers the UPS system to internal Bypass mode When this command is active, the option changes to Go to Normal Mode.
	Start Battery Test	Initiates a battery test
	Display Test	Four different selectable tests for the front panel functions: the LEDs cycle through, the alarm beep sounds, the backlight turns off and on, and the pixels scroll through to test the LCD.
Settings	User Settings	See Table 4 for detail.
	Service Settings	This screen is password-protected.
Identification		UPS Type / Part Number / Serial Number / Firmware / Display / CAN Bridge
Turn UPS ON/OFF	ON and OFF Options	UPS Off / System On / System Off

User Settings

The following table displays the options that can be changed by the user.

NOTE *Changes to the output voltage or frequency options should be made before turning on the UPS; otherwise, the changes do not take effect.*

Table 4. User Settings

Description	Available Settings	Default Setting
Set Date and Time	Set Month Date: mm/dd/yyyy Time: 24:00	 01/01/2003 00:00
Display Contrast	Adjust contrast with up/down arrow buttons	Moderate
Change Language	Select Language: <English> Elegir idioma <Español>	English
Set NominalOutput Voltage	Output: [120V/208V] [127V/220V]	120V/208V
Relay Config	Relay: [Alarm 1] [X-Slot 1-1/2/3/4] or [X-Slot 2-1/2/3/4] Setup: [Battery Low] [On Battery] [On Bypass] [UPS ok] [custom] [empty]	Alarm 1: empty X-Slots (1 or 2) #1: UPS ok #2: On Bypass #3: Summary Alarm #4: On Battery
Signal Inputs	[empty] [Logic] Signal Input must be wired to the CAN Bridge Card (see Figure 36 on page 44). For more information, refer to "Programmable Signal Inputs" in the Eaton 9355 UPS (10/15 kVA) User's Guide.	<empty>
Serial Port Config	Port: [X-Slot-1] [X-Slot-2/Serv] Speed: [19200] [9600] [2400] [1200]	19200
Modem Config	Modem Installation	<Not Installed>
	Set Modem Call Events	Event #0 Call modem: no
	Set Modem Init String	ATZ0
	Set Modem Call Command	None
	Set Modem Communication Password	None

Table 4. User Settings (continued)

Description	Available Settings	Default Setting
Start Screen	Eaton logo Mimic screen	Eaton logo
User Password	Enabled/Disabled If Enabled is selected, the password is USER.	Disabled
Audible Alarms	Normal Sound/Disabled	Normal Sound
Battery Charging	ABM cycling/constant	ABM cycling
Automatic Battery Tests	Enabled/Disabled Enabled automatically runs the battery test once a month.	Enabled
Full Power Battery Test	Enabled/Disabled	Enabled
Number of Battery Strings	0 through 22 (see "Configuring the UPS for EBMs" on page 61)	2 strings for UPS-32 models 4 strings for UPS-64 models
Battery Capacity	1 through 65535 watts per cell	34 W/cell
Battery Low Alarm Level	1.750 through 1.950 volts per cell	1.880 V/cell
Bypass Voltage High Limit	+1 through +20% (1% increments)	120V +10%
Bypass Voltage Low Limit	-1 through -20% (1% increments)	120V -15%
Nominal Output Frequency	50 Hz or 60 Hz	60 Hz
Synchronization	Enabled/Disabled	Enabled
Synchronization Window	±0.5 through ±3.0 Hz (0.1 Hz increments)	±2.0 Hz
Unsynchronized Transfer to Bypass	Allowed/Not Allowed	Not Allowed
Output Frequency Slew Rate	0.1 though 5 hertz per second (0.1 Hz increments)	0.5 Hz/s
Usage of Bypass	Enabled/Disabled	Enabled
Transfer to Bypass When Overload	After a delay/Immediately	After a delay
Automatic Start Delay	-1 through 32767 seconds (-1 means disabled)	0s
Control Commands from X-Slot1	Allowed/Disabled	Allowed
Control Commands from X-Slot2/Serv	Allowed/Disabled	Allowed

Table 4. User Settings (continued)

Description	Available Settings	Default Setting
X-Slot Signal Input Activation Delay	0 through 65 seconds	5s
Input signal delayed shutdown delay	1 through 65535 seconds	120s
Site Wiring Fault Notice	Enabled/Disabled	Enabled
Reset Custom Event Settings	0 through 32	Total: 0/32
Auto Output Configuration	Enabled/Disabled	Enabled for initial startup Disabled after initial startup

Initial Startup

Startup and operational checks must be performed by an authorized Eaton Customer Service Engineer, or the warranty terms as specified in the *Eaton 9355 UPS (10/15 kVA) User's Guide* become void. This service is offered as part of the sales contract for the UPS. Contact service in advance (usually a two-week notice is required) to reserve a preferred startup date.

Configuring the UPS for EBMs

NOTE *Each UPS in a parallel system must have its own EBM and the same number of EBMs to ensure consistent runtimes.*

To ensure maximum battery runtime, configure the UPS for the correct number of EBMs:

1. Press any button on the front panel display to activate the menu options.
2. Using the ↑ button, scroll to the Settings menu.
3. Press the → button twice to select the User Settings menu.
4. Using the ↓ button, scroll to the Number of Battery Strings option and press the → button.
5. Use the ↑ or ↓ buttons to select the number of strings according to your UPS configuration:

All 2-High UPS and EBM Cabinets*	Number of Strings
UPS + 1 EBM	6
UPS + 2 EBMs	10
UPS + 3 EBMs	14
UPS + 4 EBMs	18
All 3-High UPS and EBM Cabinets*	**Number of Strings**
UPS + 1 EBM	10
UPS + 2 EBMs	16
UPS + 3 EBMs	22

*UPS-32 models contain 2 strings; EBM-64 models contain 4 strings. UPS-64 models contain 4 strings; EBM-96 models contain 6 strings.

6. Press the ↵ button to save the setting.
7. Press the ESC button until the Eaton logo appears.

Parallel System Shutdown

To remove power to the parallel UPS system output:

1. Press any button on the front panel display to activate the menu options.
2. Press the ↑ button on the front panel display and then press the → button to select the TURN UPS ON/OFF menu.
3. Press the ↓ button to select the System Off option.
4. Confirm the selection. Press and hold the ↵ button for three seconds, until the UPS stops beeping.

   The UPS removes power to the parallel UPS system output.
5. Press the ESC button until the Eaton logo appears.
6. If you want to completely remove power from the UPS, continue to the following section, "Individual UPS Shutdown," to shut down each UPS.

Individual UPS Shutdown

To shut down a single UPS in the parallel system:

1. Press any button on the front panel display to activate the menu options.
2. Press the ↑ button on the front panel display and then press the → button to select the TURN UPS ON/OFF menu.
3. Press the ↓ button to select the UPS Off option.
4. Confirm the selection. Press and hold the ↵ button for three seconds, until the UPS stops beeping.
5. Switch the UPS battery circuit breaker to the OFF position.

   The UPS is disconnected from the batteries and is on logic power only.
6. Switch the UPS breaker on the parallel tie cabinet to the OFF position.

NOTE *If there is only one breaker for all UPSs, do not switch off utility power until all UPSs are shut down.*

7. Switch off utility power where the UPS is connected.

   If you are shutting down all the UPSs in a parallel system, repeat Steps 2 through 6 for each UPS then remove utility power.

Restarting the Parallel System

To restart the parallel system:

1. Verify that the maintenance isolation breaker (if present) on the Tie Cabinet is in the OFF position or all of the UPS breakers are in the OFF position.
2. Switch on utility power where the UPSs are connected.
3. Wait for the front panel LCD to illuminate.

   The ⚠ indicator flashes on each UPS.
4. Switch all battery circuit breakers to the ON position.

   The ⚠ indicator stops flashing on each UPS.
5. Switch the UPS breakers on the parallel tie cabinet to the ON position.
6. If present, switch the maintenance isolation breaker (MIS) on the wall-mounted bypass cabinet to the ON position; otherwise, switch the UPS breakers (may be designated MOB or UPS) on the wall-mounted bypass cabinet to the ON position.

   If the ⚠ indicator is flashing, do not proceed until all alarms are clear. Check the UPS status from the front panel to view the active alarms. Correct the alarms and restart if necessary.
7. Press the ESC button once and then press the → button to select the TURN UPS ON/OFF menu.
8. Press the ↓ button to select the System On option; press the ↵ button.
9. Confirm the selection. Press and hold the ↵ button for three seconds, until the UPS stops beeping.

   The UPS goes to Bypass mode for five seconds, and then the ∽ indicator illuminates. Each UPS should be in Normal mode.
10. Press the ESC button until the Eaton logo appears.

Chapter 10 Parallel Bypass

To switch the parallel UPS to maintenance bypass from Normal mode:

1. From any UPS, set the system to internal Bypass mode:
   - Using the ↑ button on the front panel display, scroll to the Control menu option and press the → button.
   - Press the ↵ button to select the Go to Bypass Mode option.

     The indicator illuminates and the indicator extinguishes, indicating the UPS system is operating in Bypass mode.
2. Switch the bypass breaker (may be designated MBP or CBP) in the parallel tie cabinet to the ON position.
3. If present, switch the maintenance isolation breaker (MIS) on the parallel tie cabinet to the OFF position; otherwise, switch the UPS breakers (may be designated MOB or UPS) on the parallel tie cabinet to the OFF position.

To return to Normal mode from maintenance bypass:

1. Verify that the maintenance isolation breaker (if present) on the Tie Cabinet is in the OFF position or all of the UPS breakers are in the OFF position.
2. Switch on utility power where the UPSs are connected.

   In a parallel capacity system (N+0 or N+1), apply utility to the minimum number of UPSs required for capacity.

   The indicator illuminates, indicating the UPS system is operating in Bypass mode.

   The display indicates On Manual/Maintenance Bypass.
3. Verify voltage is present on the UPS output by checking that an output voltage reading present on the front panel LCD display.

   The load is now powered by utility power.

4. If present, switch the maintenance isolation breaker (MIS) on the wall-mounted bypass cabinet to the ON position; otherwise, switch the UPS breakers (may be designated MOB or UPS) on the wall-mounted bypass cabinet to the ON position.

5. Switch the bypass breaker (may be designated MBP or CBP) in the wall-mounted bypass cabinet to the OFF position.

   The UPS is now powering the load in Bypass mode.

NOTE *Use the same UPS that was used to set internal bypass to return the parallel system to Normal mode.*

6. On the same UPS front panel, set the UPS to Normal mode:

   - Press the ↵ button to select the Go to Normal Mode option.
   - Each UPS goes to Normal mode.

   The UPS is now powering the load in Normal mode.

Chapter 11 Troubleshooting

The Eaton 9355 UPS is designed for durable, automatic operation and also alerts you whenever potential operating problems may occur. Usually the alarms shown by the control panel do not mean that the output power is affected. Instead, they are preventive alarms intended to alert the user. Use the following troubleshooting chart to determine the UPS alarm condition.

Typical Alarms and Conditions

The following table describes typical alarms and conditions; check the Event Log through the control panel for a list of active alarms. If an alarm appears with a service code, please contact the Help Desk (see page 70).

Alarm or Condition	Possible Cause	Action
On Battery LED is on. 1 beep every second.	A utility failure has occurred and the UPS is in Battery mode.	The UPS is powering the equipment with battery power. Prepare your equipment for shutdown.
Battery Low LED is on. Continuous beep for 10 seconds.	The battery is running low.	Five minutes or less of battery power remains (depending on load configuration and battery charge). Save your work and turn off your equipment. When utility power is restored, the UPS restarts automatically, provides power to the load, and charges the battery.
Battery Breaker LED is on. 1 beep every second.	The UPS does not recognize the internal batteries.	Verify the battery circuit breaker is in the ON position. If the condition persists, contact your service representative.
Overload LED is on. 1 beep every second.	Power requirements exceed the UPS capacity (greater than 100% of nominal).	Remove some of the equipment from the UPS. The UPS continues to operate, but may switch to Bypass mode if the load increases. The alarm resets when the condition becomes inactive.

Alarm or Condition	Possible Cause	Action
Overtemperature LED is on. 1 beep every second.	UPS internal temperature is too high or the fan has failed.	Turn the maintenance bypass switch to the SERVICE position. Otherwise, shut down the UPS. Clear vents and remove any heat sources. Allow the UPS to cool. Ensure the airflow around the UPS is not restricted. If the alarm disappears, turn the maintenance bypass switch back to the UPS position. If the condition persists, contact your service representative.
Battery test failed	The batteries need service.	Contact your service representative.
The UPS does not start.	The main utility breaker is off.	Verify that the main utility breaker is on.
	If an optional isolation transformer is installed, the input circuit breaker is off.	Verify that the isolation transformer input circuit breaker is on.
	The remote emergency power-off (REPO) switch is active or the REPO connector is missing.	Reset the REPO switch and restart the UPS. Verify that the REPO connector is present.
Power is not available at the UPS output receptacles.	The UPS is in Standby mode.	Supply power to the connected equipment: Press any button on the front panel display to activate the menu options. Press the ↑ button on the front panel display and then press the button to select the TURN UPS ON/OFF menu. Press the ↓ button to select the System On option; press the button. Press and hold the button for three seconds, until the UPS stops beeping.
The UPS does not provide the expected backup time.	The batteries need charging or service.	Apply utility power for 48 hours to charge the batteries. If the condition persists, contact your service representative.
	Battery circuit breakers are in the OFF position.	Switch all battery circuit breakers to the ON position.

Alarm or Condition	Possible Cause	Action
Check Parallel Board	The UPS is not recognizing another parallel unit.	From the UPS Status menu, select the Units on CAN Bus option and verify that all UPSs appear in the list. If any UPS is missing, verify the Powerware Hot Sync® CAN Bridge Card connections and recheck the status from the UPS front panel. If all UPSs appear in the list, check the pull-chain wiring (see page 43). Set the system to internal Bypass mode (see page 65). If the condition persists, contact your service representative.
Abnormal output voltage at startup	The UPS breaker on the parallel tie cabinet was not switched to the ON position properly.	Shut down the UPS where the alarm is indicated. Switch the UPS breaker on the parallel tie cabinet to the ON position. Start up the UPS. Select the System On option through the front panel of the UPS that was turned off.
Selective Trip	The Powerware Hot Sync® CAN Bridge Card is not wired correctly.	Verify the CAN wiring (see page 43). Verify the pull-chain wiring (see page 43). If the condition persists, contact your service representative.

Silencing the Alarm

Before silencing an alarm, check the alarm condition and perform the applicable action to resolve the condition.

Press any button on the front panel display to silence the alarm. If the alarm status changes, the alarm beeps again, overriding the previous alarm silencing.

Service and Support

If you have any questions or problems with the UPS, call your **Local Distributor** or the **Help Desk** at one of the following telephone numbers and ask for a UPS technical representative.

United States:	1-800-843-9433
Canada:	1-800-461-9166 ext 260
All other countries:	Call your local service representative

Please have the following information ready when you call for service:

- Model number
- Serial number
- Firmware version number
- Date of failure or problem
- Symptoms of failure or problem
- Customer return address and contact information

Chapter 12 Warranty

Limited Factory Warranty

Three-Phase Eaton® 9355 UPS Products

WARRANTOR: The warrantor for the limited warranties set forth herein is Eaton Corporation, an Ohio Corporation ("Eaton").

LIMITED WARRANTY: This limited warranty (this "Warranty") applies only to the original end-user (the "End-User") of the Eaton 9355 UPS Products (the "Product") and cannot be transferred. This Warranty applies even in the event that the Product is initially sold by Eaton for resale to an End-User.

WHAT THIS LIMITED WARRANTY COVERS: The warrantor warrants,with the terms of this Warranty, that the Eaton three-phase UPS electronics, Eaton-built accessories, and Eaton -built battery cabinets (individually and collectively, the "Warranted Items") are free from defects in material and workmanship.

For Product installed (and currently located) in the fifty (50) United States and the District of Columbia, if, in the opinion of Eaton, a Warranted Item is defective, Eaton's sole obligation, at the option of Eaton, will be to refurbish or replace such defective Warranted Item (including the costs of providing diagnosis, service, and labor ["labor coverage"]). The defective Warranted Item will be refurbished or replaced onsite at the End-User's location or such other location as determined by Eaton. Any parts that are replaced may be new or reconditioned. All parts replaced by Eaton shall become the property of Eaton.

For Product installed (and currently located) outside the fifty (50) United States and the District of Columbia, if, in the opinion of Eaton, a Warranted Item is defective, Eaton's sole obligation, at the option of Eaton, will be to refurbish or replace such defective Warranted Item (not including the costs of labor coverage). The defective Warranted Item will be refurbished or replaced onsite at the End-User's location or such other location as determined by Eaton. Any parts that are replaced may be new or reconditioned. All parts replaced by Eaton shall become the property of Eaton.

LIMITED WARRANTY PERIOD:
The period covered by this Warranty for Product installed (and currently located) in the fifty (50) United States and the District of Columbia is ninety (90) days from the date of Product purchase for labor coverage and twelve (12) months from the date of Product purchase or eighteen (18) months from the date of Product shipment, whichever occurs first, for the refurbishment/replacement of parts.

The period covered by this Warranty for Product installed (and currently located) outside the fifty (50) United States and the District of Columbia is ninety twelve (12) months from the date of Product purchase or eighteen (18) months from the date of Product shipment, whichever occurs first, for the refurbishment/replacement of parts.

WHAT THIS LIMITED WARRANTY DOES NOT COVER: This Warranty does not cover any defects or damages caused by: (a) failure to properly store the Product before installation, including the "trickle charge" of batteries no later than the date indicated on the packaging; (b) shipping and delivery of the Product if shipping is FOB Factory; (c) neglect, accident, fire, flood, lightning, vandalism, acts of God, Customer's neglect, abuse, misuse, misapplication, incorrect installation; (d) repair or alteration not authorized in writing by Eaton personnel or performed by an authorized Eaton Customer Service Engineer or Agent; or (e) improper testing, operation, maintenance, adjustment, or any modification of any kind not authorized in writing by Eaton personnel or performed by an authorized Eaton Customer Service Engineer or Agent.

This Warranty is not valid: if the Product's serial numbers have been removed or are illegible. Any Warranted Items repaired or replaced pursuant to this Warranty will be warranted for the remaining portion of the original Warranty subject to all the terms thereof. Labor warranty is not provided for Product located outside of the fifty (50) United States or the District of Columbia. Any equipment, parts, or materials included in the Product and not manufactured by Eaton are warranted solely by the manufacturer of such equipment, parts, or materials and are not included as part of this Warranty. Batteries are not warranted by Eaton.

THIS WARRANTY IS THE END-USER'S SOLE REMEDY AND IS EXPRESSLY IN LIEU OF, AND THERE ARE NO OTHER EXPRESSED OR IMPLIED GUARANTEES OR WARRANTIES (INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED).

LIMITATION OF LIABILITY: In no event shall Eaton be liable for any indirect, incidental, special, or consequential damages of any kind or type whatsoever, or based on any claim or cause of action, however denominated. Eaton shall not be responsible for failure to provide service or parts due to causes beyond Eaton's reasonable control. In no case will Eaton's liability under this Warranty exceed the replacement value of the Warranted Items.

END-USER'S OBLIGATIONS: In order to receive the benefits of this Warranty, the End-User must register the product warranty (via mail or online at www.eaton.com/PQ/Register); use the Product in a normal way; follow the Product's user's guide; and protect against further damage to the Product if there is a covered defect.

OTHER LIMITATIONS: Eaton's obligations under this Warranty are expressly conditioned upon receipt by Eaton of all payments due to it (including interest charges, if any). During such time as Eaton has not received payment of any amount due to it for the Product, in accordance with the contract terms under which the Product is sold, Eaton shall have no obligation under this Warranty. Also during such time, the period of this Warranty shall continue to run and the expiration of this Warranty shall not be extended upon payment of any overdue or unpaid amounts.

COSTS NOT RELATED TO WARRANTY: The End-User shall be invoiced for, and shall pay for, all services not expressly provided for by the terms of this Warranty, including without limitation site calls involving an inspection that determines no corrective maintenance is required. Any costs for replacement equipment, installation, materials, freight charges, travel expenses, or labor of Eaton representatives outside the terms of this Warranty will be borne by the End-User.

OBTAINING WARRANTY SERVICE: In the USA, call the Eaton Customer Reliability Center 7x24 at 800-843-9433. Outside of the USA, call your local Eaton sales or service representative. For comments or questions about this Limited Factory Warranty, write to the Customer Quality Representative, 3301 Spring Forest Road, Raleigh, North Carolina 27616 USA.

164201601 B